Hawker Beechcraft

Hawker 800XP

Serials 258541, 258556, 258567 and After

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AIRPLANES EQUIPPED WITH COLLINS PRO LINE 21 AVIONICS

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Aircraft Certification Office
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Wichita, Kansas
USA

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5	Revision A2: Jan 11, 2005
6	Revision A2: Jan 11, 2005
Sub-section 5.20 TAKE-OFF FIELD LENGTH - APR ON	
1	Revision A2: Jan 11, 2005
2	Revision A2: Jan 11, 2005
3	Revision A2: Jan 11, 2005
4	Revision A2: Jan 11, 2005

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Section & Page	*Revision & Date*
5	Revision A2: Jan 11, 2005
6	Revision A2: Jan 11, 2005
7	Revision A2: Jan 11, 2005
8	Revision A2: Jan 11, 2005
9	Revision A2: Jan 11, 2005
10	Revision A2: Jan 11, 2005
11	Revision A2: Jan 11, 2005
12	Revision A2: Jan 11, 2005
13	Revision A2: Jan 11, 2005
14	Revision A2: Jan 11, 2005
15	Revision A2: Jan 11, 2005
16	Revision A2: Jan 11, 2005
17	Revision A2: Jan 11, 2005
18	Revision A2: Jan 11, 2005
19	Revision A2: Jan 11, 2005
20	Revision A2: Jan 11, 2005
21	Revision A2: Jan 11, 2005
22	Revision A2: Jan 11, 2005
23	Revision A2: Jan 11, 2005
24	Revision A2: Jan 11, 2005
25	Original Issue: Nov 30, 2001
26	Original Issue: Nov 30, 2001
27	Original Issue: Nov 30, 2001
28	Original Issue: Nov 30, 2001
29	Original Issue: Nov 30, 2001
30	Original Issue: Nov 30, 2001
31	Original Issue: Nov 30, 2001
32	Original Issue: Nov 30, 2001
33	Original Issue: Nov 30, 2001
34	Original Issue: Nov 30, 2001
35	Original Issue: Nov 30, 2001
36	Original Issue: Nov 30, 2001

Section & Page	*Revision & Date*
37	Original Issue: Nov 30, 2001
38	Original Issue: Nov 30, 2001
39	Original Issue: Nov 30, 2001
40	Original Issue: Nov 30, 2001
41	Revision A1: Nov 13, 2002
42	Revision A1: Nov 13, 2002
Sub-section 5.25 NET TAKE-OFF FLIGHT PATH - APR ON	
1	Original Issue: Nov 30, 2001
2	Original Issue: Nov 30, 2001
3	Original Issue: Nov 30, 2001
4	Revision A1: Nov 13, 2002
5	Revision A1: Nov 13, 2002
6	Revision A1: Nov 13, 2002
7	Original Issue: Nov 30, 2001
8	Revision A1: Nov 13, 2002
9	Original Issue: Nov 30, 2001
10	Original Issue: Nov 30, 2001
11	Revision A1: Nov 13, 2002
12	Revision A1: Nov 13, 2002
13	Original Issue: Nov 30, 2001
14	Original Issue: Nov 30, 2001
15	Revision A1: Nov 13, 2002
16	Revision A1: Nov 13, 2002
17	Original Issue: Nov 30, 2001
18	Revision A1: Nov 13, 2002
19	Original Issue: Nov 30, 2001
20	Revision A1: Nov 13, 2002
21	Original Issue: Nov 30, 2001
22	Revision A1: Nov 13, 2002
23	Original Issue: Nov 30, 2001

LIST OF EFFECTIVE PAGES

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Section & Page	*Revision & Date*
Sub-section 5.30 TAKE-OFF FIELD LENGTH - DERATE	
1	Original Issue: Nov 30, 2001
Sub-section 5.35 NET TAKE-OFF FLIGHT PATH - DERATE	
1	Original Issue: Nov 30, 2001
Sub-section 5.40 EN-ROUTE DATA	
1	Original Issue: Nov 30, 2001
2	Revision A1: Nov 13, 2002
3	Original Issue: Nov 30, 2001
Sub-section 5.45 LANDING WAT DATA	
1	Original Issue: Nov 30, 2001
2	Revision A1: Nov 13, 2002
3	Original Issue: Nov 30, 2001
Sub-section 5.50 LANDING FIELD LENGTHS	
1	Revision A2: Jan 11, 2005
2	Revision A2: Jan 11, 2005
3	Revision A2: Jan 11, 2005
4	Revision A2: Jan 11, 2005
5	Revision A2: Jan 11, 2005
6	Revision A2: Jan 11, 2005
7	Revision A2: Jan 11, 2005
Sub-section 5.55 GROSS PERFORMANCE	
1	Revision A1: Nov 13, 2002
2	Original Issue: Nov 30, 2001
3	Original Issue: Nov 30, 2001
4	Revision A1: Nov 13, 2002
5	Original Issue: Nov 30, 2001
6	Original Issue: Nov 30, 2001
7	Original Issue: Nov 30, 2001
8	Revision A1: Nov 13, 2002
9	Original Issue: Nov 30, 2001

Section & Page	*Revision & Date*
10	Original Issue: Nov 30, 2001
11	Original Issue: Nov 30, 2001
12	Revision A1: Nov 13, 2002
13	Revision A1: Nov 13, 2002
14	Revision A1: Nov 13, 2002
15	Revision A1: Nov 13, 2002
16	Revision A1: Nov 13, 2002
17	Revision A1: Nov 13, 2002
18	Revision A1: Nov 13, 2002
19	Revision A1: Nov 13, 2002
Section - 6 WEIGHT & BALANCE	
1	Revision A1: Nov 13, 2002
2	Revision A1: Nov 13, 2002
3	Revision A1: Nov 13, 2002
4	Revision A1: Nov 13, 2002
5	Revision A3: Mar 22, 2005
6	Revision A3: Mar 22, 2005
7	Original Issue: Nov 30, 2001
8	Revision A1: Nov 13, 2002
9	Original Issue: Nov 30, 2001
10	Revision A3: Mar 22, 2005
11	Revision A1: Nov 13, 2002
12	Revision A1: Nov 13, 2002
13	Original Issue: Nov 30, 2001
14	Revision A1: Nov 13, 2002
15	Revision A3: Mar 22, 2005
16	Revision A1: Nov 13, 2002
17	Revision A3: Mar 22, 2005
18	Revision A1: Nov 13, 2002
19	Original Issue: Nov 30, 2001
20	Revision A1: Nov 13, 2002
21	Original Issue: Nov 30, 2001

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Section & Page	***Revision & Date***
22	Revision A1: Nov 13, 2002
23	Revision A1: Nov 13, 2002
24	Revision A1: Nov 13, 2002
25	Original Issue: Nov 30, 2001
26	Revision A1: Nov 13, 2002
27	Original Issue: Nov 30, 2001
28	Revision A1: Nov 13, 2002
29	Original Issue: Nov 30, 2001
30	Revision A1: Nov 13, 2002
Section - 7 SUPPLEMENTS	
1	Original Issue: Nov 30, 2001
2	Original Issue: Nov 30, 2001
See LOG OF SUPPLEMENTS	

LOG OF TEMPORARY CHANGES

FAA Approved Airplane Flight Manual
P/N 140-590032-0005

Issue Date: November 11, 2013

Active Temporary Changes must be inserted into this manual for all flight operations.

Part Number	Subject	Date
140-590032-0005TC1	Instructions regarding erroneous EGPWS announcements during approach or landing. Sub-section 4.10 - NORMAL PROCEDURES, Page 11.	Nov 30, 2001
140-590032-0005TC2	**(Incorporated into AFM at Revision A3)**	Cancelled
140-590032-0005TC3	**(Incorporated into AFM at Revision A1)**	Cancelled
140-590032-0005TC4	**(Incorporated into AFM at Revision A1)**	Cancelled
140-590032-0005TC5	**(Incorporated into AFM at Revision A1)**	Cancelled
140-590032-0005TC6	**(Incorporated into AFM at Revision A3)**	Cancelled
140-590032-0005TC7	**(Incorporated into AFM at Revision A3)**	Cancelled
140-590032-0005TC8	**(Removed from the AFM at Revision A2)**	Cancelled
140-590032-0005TC9	**(Removed from the AFM at Revision A3)**	Cancelled
140-590032-0005TC10	**(Removed from the AFM at Revision A3)**	Cancelled
140-590032-0005TC11	**(Removed from the AFM at Revision A3)**	Cancelled
140-590032-0005TC12 (Issue 3)	Revised the P-RNAV equipment list to include GPS-4000S and DBU-5000. Section 2 - LIMITATIONS, Page 19.	May 1, 2008
140-590032-0005TC13	Addition of ditching information and procedures. Section 2 - LIMITATIONS, Page 25. Section 3 - EMERGENCY PROCEDURES, Page 37.	Mar 14, 2005
140-590032-0005TC14	Revised text for the definition of V_{MCG} and V_1 speeds. Sub-section 5.10 - OPERATING SPEEDS, Page 3.	Nov 3, 2005
140-590032-0005TC15	Autopilot Flight Director Limitation. Section 2 - LIMITATIONS, Page 19.	Dec 15, 2005

Part Number	Subject	Date
140-590032-0005TC16 (Issue 3)	Revised Ice Protection Limitations. Section 2 - LIMITATIONS, Page 9. Sub-section 4.10 - NORMAL PROCEDURES, Page 3.	Aug 19, 2008
140-590032-0005TC17 (Issue 2)	Revised procedure and procedure order for After Take-off Checks. Sub-section 4.10 - NORMAL PROCEDURES, Page 9.	Oct 1, 2012
NOTE: Temporary Changes TC18 and TC19 not issued.		
140-590032-0005TC20	Revision of existing SIDESCREEN OVERHEAT text and addition of instructions for SIDE SCRN OVHT warning recurrence. Sub-section 4.05 - ABNORMAL PROCEDURES, Page 41.	Nov 11, 2013
140-590032-0005TC21	Changed "EMERG LIGHTS" to read "EMERG lights". Sub-section 4.10 - NORMAL PROCEDURES, Page 12. Revised the ENG CMPTR steps in the SHUT DOWN CHECKS and LEAVING AIRPLANE (TERMINATING FLIGHT) CHECKS. Sub-section 4.10 - NORMAL PROCEDURES, Pages 12 & 13.	Mar 2, 2009
NOTE: Temporary Change TC22 not issued.		
140-590032-0005TC23	To provide a correction factor for turning climbs. Sub-section 5.25 - NET TAKE-OFF FLIGHT PATH - APR ON, Pages 8 and 12. Sub-section 5.40 - EN-ROUTE DATA, Page 2. Sub-section 5.55 - GROSS PERFORMANCE, Pages 4, 8 and 12.	Jun 2, 2009
NOTE: Temporary Changes TC24 and TC25 not issued.		
140-590032-0005TC26	Revised the Loading and Flight Envelopes to correspond with the definition listed in the Type Certificate Data Sheet. Section 2 - LIMITATIONS, Pages 6 & 7. Section 6 - WEIGHT & BALANCE, Pages 9 & 10.	Feb 7, 2011
140-590032-0005TC27	Additional procedures for THREE GREENS NOT INDICATED. Section 3 - EMERGENCY PROCEDURES, Page 25.	Feb 28, 2011
NOTE: Temporary Change TC28 not issued.		

140-590032-0005TC29	Revised fuel specifications and minimum fuel temperatures. Section 2 - LIMITATIONS, Pages 13 and 15.	Sep 5, 2013

NOTE: This Log of Temporary Changes must be filed in the front of this AFM immediately in front of the Log of Revisions pages. This page replaces any Log of Temporary Changes dated prior to the issue date near the top of Page 1 of 4.

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LOG OF REVISIONS

FAA Approved Airplane Flight Manual
P/N 140-590032-0005

Revision A4: March 26, 2007

LOG OF REVISIONS

Section & Page	*Description*
Title & Logo Pages	Revised title page to reflect the new Hawker Beechcraft logo. Changed the copyright statement to reflect Hawker Beechcraft Corporation. Revised the header on the logo page to reflect Hawker Beechcraft Corporation. Added the Hawker Beechcraft, Inc. owner statement to logo page.
List of Effective Pages Pages 1 thru 7	Revised page header to reflect Hawker Beechcraft Corporation and updated for Revision A4.
Log of Revisions Pages 1 of 1	Revised page header to reflect Hawker Beechcraft Corporation and updated for Revision A4.

Approved By: J M Baker

For Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 3/26/07

A4

LOG OF REVISIONS

Serials 258541, 258556, 258567 and After

FAA Approved Airplane Flight Manual

P/N 140-590032-0005
for
AIRPLANES EQUIPPED WITH COLLINS PRO LINE 21 AVIONICS

Revision A3: March 22, 2005

LOG OF REVISIONS

Section & Page	*Description*
Title & Logo Pages	Updated for Revision A3.
List of Effective Pages Pages 1 thru 7	Updated for Revision A3.
Log of Revisions Pages 1 thru 12	Issued for Revision A3.
Section 1 **GENERAL**	Pages 11 thru 19 are replaced at this revision. Pages which are replaced, but have no revision bars are not listed on this Log of Revisions and are replaced for a new company header only with no technical changes.
Page 11	Removed hyphen from the word take-off, to read takeoff.
Page 13	Removed hyphen from ...armed for take-off, to read ...armed for takeoff. Added APU...Auxiliary Power Unit. Added CMPTER...Reference to Engine Computer annunciator. Added CMPTR... Reference to Engine Computer selector switches.
Page 14	Addition of the following: ENG...Engine GEN...Generator GS...Glideslope HF...High Frequency ICAO...International Civil Aviation Organization INV...Inverter L & R...Left and Right MCT...Maximum Continuous Thrust MMEL...Master Minimum Equipment List
	A3

LOG OF REVISIONS (Continued)

Section & Page	***Description***
Page 15	Addition of the following: NAV...Navigation OVRD...Override PRESSN...Pressurization REV...Reversionary RVSM...Reduced Vertical Separation Minimum TERR...Terrain TO... Addition of Takeoff without hyphen.
Page 16	Addition of the following: VLV...Valve V_{SPEEDS}...Addition of reference statement concerning $V_{SPEEDS.}$ V_{APP}..Approach Speed WS...Windshear XE...Power Emergency - AC X-FEED...Crossfeed XFMR...Transformer XS...Power System - AC
Section 2 LIMITATIONS	Pages 1 thru 14 and Pages 21 & 22 are replaced in this revision. Pages which are replaced, but have no revision bars are not listed on this Log of Revisions and are replaced for a new company header only with no technical changes.
Page 1	Hyphenated Takeoff to read Take-off (2 places).
Page 3	Added RVSM bullet. Hyphenated Takeoff to read Take-off. Hyphenated TAKEOFF to read TAKE-OFF.
Page 4	Edited Air Temperature data for clarity.
Page 7	Added increment marks to the top and bottom of graph.
Page 10	Deleted text in reference to ice detection lights and NOTE reference to MMEL.
Page 11	Added data to Takeoff condition. Incorporated Temporary Change TC6, changing N_2 RPM of 100% to read 100.8%.
Page 12	Upgraded usable engine oils for airplanes which "have" or "have not" had Honeywell Service Bulletin 72-3597 or 72-3662 accomplished.

LOG OF REVISIONS (Continued)

Section & Page	***Description***
Page 13	Incorporated TC10 by adding engine ant-icing information in Engine Ice Protection System.
Page 22	Changed data reference to Section 5, Sub-section 2 of the Pilot's Operating Manual (POM). Added NOTE information for Maneuvering Speed.
Section 3 EMERGENCY PROCEDURES	All pages of Section 3 (1 thru 37) are replaced in this revision. Pages which are replaced, but have no revision bars are not listed on this Log of Revisions and are replaced for a new company header only with no technical changes.
Page 2	Deleted the slash mark (/) from GS.
Page 3	Reversed 1st and 2nd steps of top memory box for the 1st step to read Thrust levers...Close
Page 4	Bolded text in annunciator area. No technical change.
Page 5	Bolded text in annunciator area. No technical change.
Page 7	Under *If Landing Is Not Assured*, Deleted steps A/P & YD...Disengage and A/P...As required. Added step FLAP OVRD...........Select Under *When Landing Is Assured*, Deleted the slash mark (/) from AP. Bolded text in annunciator area. No technical change.
Page 9	Bolded text in annunciator area. No technical change. Deleted the slash mark (/) from AP.
Page 11	Bolded text in annunciator area. No technical change. Added continuation arrow at the footer of the page.
Page 12	Added header DEPRESSURIZATION (continued). Changed GROUND PRESS TEST VALVE to read PRESSURIZATION CONTROL valve.
Page 14	Bolded text in annunciator area. No technical change. Deleted the slash mark (/) from AP.

LOG OF REVISIONS (Continued)

Section & Page	***Description***
Page 15	Bolded text in annunciator area. No technical change. Deleted XE FAIL annunciator. Added continuation arrow at the footer of the page.
Page 16	Added header DOUBLE GENERATOR FAILURE (continued). Added "at pilot's discretion" to the Electrical loads step. Changed text for component listing in note 1. Added continuation arrow at the footer of the page.
Page 17	Added header DOUBLE GENERATOR FAILURE (continued). Removed FMS 1 and ADF 1 from "If More Than 30 Minutes From Landing". Temporary Change TC7 information was incorporated and edited to state "As the main airplane batteries deplete, the Pilot's PFD and DME 1 will fail".
Page 18	Bolded text in annunciator area. No technical change.
Page 19	Bolded text in annunciator area. No technical change.
Page 22	Added header ELECTRICAL FIRE OR SMOKE (continued).
Page 23	Added continuation arrow at the footer of the page.
Page 24	Added header SMOKE FROM AIR CONDITIONING DUCTS (continued).
Page 25	Bolded text following the arrow "Make a normal landing". Added continuation arrow at the footer of the page.
Page 26	Added header THREE GREENS NOT INDICATED (continued).
Page 27	Bolded text following the arrow "Make a normal landing". Changed bold italic text "Perform an all gear up landing" to bold regular text.
Page 31	Hyphenated Takeoff to read Take-off in both memory boxes.
Page 32	Deleted the slash mark (/) from AP (2 places). Added continuation arrow at the footer of the page.

LOG OF REVISIONS (Continued)	
Section & Page	***Description***
Page 33	Added header AUTOPILOT MALFUNCTIONS (continued). Deleted the slash mark (/) from AP (2 places).
Page 34	Deleted the slash mark (/) from AP (2 places). Added continuation arrow at the footer of the page.
Page 35	Added header FLIGHT DISPLAY FAILURE FLAGS (continued). Deleted the slash mark (/) from GS
Section 4 Sub-section 4.05 ABNORMAL PROCEDURES	All pages of Sub-section 4.05 (1 thru 52) are replaced in this revision. Pages which are replaced, but have no revision bars are not listed on this Log of Revisions and are replaced for a new company header only with no technical changes.
Page 6	Added (affected engine) to various steps. Changed ENG CMPTER... to read ENG CMPTR.... Subscripted N1 to read N_1. Added hyphen to GEN (affected engine).....Check on-line.
Page 7	Added (affected engine) to various steps. Edited START PWR and ENG 1 or 2 starter text. Added hyphen to GEN (affected engine).....Check on-line.
Page 8	Replaced the ENGINE RELIGHT ENVELOPE for clarity.
Page 9	Bolded text in annunciator area. No technical change. Changed ENG CMPTER... to read ENG CMPTR (affected engine)... Added (affected engine) to Thrust lever (2 places). Added Landing procedure.
Page 10	Added (affected engine) to various steps. Changed ENG CMPTER... to read ENG CMPTR (affected engine)...
Page 13	Added FLAP OVRD......Select. Deleted the slash mark (/) from AP.
Page 15	Deleted space following Sub from Sub-section. Added FLAP OVRD....Select.
Page 17	Bolded text in annunciator area. No technical change.
Page 18	Added FLAP OVRD....Select.

LOG OF REVISIONS (Continued)

Section & Page	***Description***
Page 19	Bolded text in annunciator area and deleted "and" from "and/or".
Page 20	Bolded text in annunciator area. No technical change.
Page 21	Changed FLT DK to CPIT (2 places). Changed "manual" to upper case MANUAL in the 3rd NOTE (same as 1st NOTE).
Page 22	Bolded text in annunciator area. No technical change. Deleted text under "*Airplane On Ground* ".
Page 23	Bolded text in annunciator areas. No technical change.
Page 24	Bolded text in annunciator area and deleted "and" from "and/or".
Page 25	Bolded text in annunciator area. No technical change.
Page 26	Bolded text in annunciator areas. No technical change.
Page 27	Reversed 1st and 2nd steps to read Thrust levers...Close as 1st step (2 places).
Page 28	Added continuation arrow at the footer of the page.
Page 29	Added header LANDING BY USE OF TRIM SYSTEM (continued). Under Aileron Unusable Reworded Aileron trim and rudder for clarification. Moved WARNING from after the procedures to precede Airspeed.....V_{REF} +25 KIAS, minimum
Page 31	Bolded text in annunciator area (no technical change). Added identification text to annunciator. Incorporated Temporary Change TC11 which includes additional text for 2 channel and 3rd channel Stall Warning & Identification systems.
Page 32	Added identification text to annunciator. Re-configured SQUAT annunciator. Changed LANDING GEAR BAULK OVRD text to read GEAR OVRD.

LOG OF REVISIONS (Continued)

Section & Page	***Description***
Page 33	Bolded text in annunciator area. No technical change. Moved CAUTION from after procedures to immediately follow Hand pump....Operate until gear locks down. Added continuation arrow at the footer of the page.
Page 34	Added header MAIN HYDRAULIC FAILURE (continued). Bolded text in annunciator area. No technical change.
Page 35	Added comma following "extinguishes". Incorporated Temporary Change TC9, deleted text "Correct prior to the next flight".
Page 37	Changed BAULK OVRD to read GEAR OVRD.
Page 39	Bolded text in annunciator area. No technical change. Edited text by removing initial capital letters.
Page 40	Bolded text in annunciator area. No technical change. Edited text in PITOT/VANE HEAT step. Added PITOT AMPS step. Added WARNING for autopilot performance. Changed italic *R PITOT HTR FAIL* to regular text.
Page 41	Bolded text in annunciator areas. No technical change.
Page 42	Bolded text in annunciator area and deleted "and" from "and/or".
Page 43	Deleted step (c) of "When Flying In RVSM Airspace". Added continuation arrow at the footer of the page.
Page 44	Added header AVIONICS SYSTEMS (continued). Under "Single AHRS Failure", changed AHRS reversion switch to read AHS reversion switch. Changed text "CVR Fault" to read "CVR Failure" and changed CVR Fault Annunciator to read CVR FAIL Annunciator. Added continuation arrow at the footer of the page.
Page 45	Added header AVIONICS SYSTEMS (continued). Deleted the slash mark (/) from AP (2 places). Added continuation arrow at the footer of the page.
Page 46	Added header AVIONICS SYSTEMS (continued).

LOG OF REVISIONS (Continued)	
Section & Page	***Description***
Page 47	Changed AHRS text to read AHS (4 places). Added continuation arrow at the footer of the page.
Page 48	Added header COMPARATORS (continued). Deleted the slash mark (/) from AP. Changed text "warrant" to read "permit". Added continuation arrow at the footer of the page.
Page 49	Added header COMPARATORS (continued).
Page 50	Added hyphen to take-off. Deleted the slash mark (/) from GS.
Page 52	Changed EMRG lights............AUTO to read EMERG lights............ARM
Section 4 Sub-section 4.10 NORMAL PROCEDURES	All pages of Sub-section 4.10 (1 thru 21) are replaced in this revision. Pages which are replaced, but have no revision bars are not listed on this Log of Revisions and are replaced for a new company header only with no technical changes.
Page 1	Changed Figure 4.10.1 title to upper case, as per page 2 header. Added GROUND HANDLING CHECKLIST. Moved RVSM CHECKS from the bottom of the page and deleted sub-headings. Changed ELEVATION to read FIELD PRESSURE ALTITUDE.
Page 3	Incorporated Temporary Change TC2 for additional information of GROUND HANDLING CHECKLIST. Addition of NOTE 1 for reference to Configuration Deviation List (CDL). Added reference to "see AFM Section 2 - LIMITATIONS". Addition of reference to "see NOTE 1 above".
Page 4	Added NOTE for reference to APU operation. Added continuation arrow at the footer of the page.

LOG OF REVISIONS (Continued)

Section & Page	***Description***
Page 5	Added header BEFORE START CHECKS (continued). Added sub-header for Abort Conditions. NOTE: Revision bars appear to the right of the affected box text. Left Box: Deleted reference to APU operation. Right Box: Revised text to read as follows - R PUMP to read R PUMP (fuel) ENG CMPTER 2 to read ENG CMPTR 2 No. 2 MAIN AIR VLV to read MAIN AIR VLV 2 No. 2 Engine to read ENG 2 Added Transponders step for incorporation of RVSM. Added continuation arrow at the footer of the page.
Page 6	Added header BEFORE START CHECKS (continued). Added NOTE which incorporates Temporary Change TC11 for airplanes with 2 or 3 channel Stall Warning & Identification systems. Added steps, Fuel used...Reset and Clocks...Set. Added continuation arrow at the footer of the page.
Page 7	Added header BEFORE START CHECKS (continued). Changed ENG CMPTERs to read ENG CMPTRs. Changed START PWR...ON to read START PWR... Push PWR ON - light illuminates. Changed No. 2 Engine (if not already running)... Push OPERATING to read ENG 2 (if not running)...Push OPERATING - light illuminates. Changed No. 1 Engine... Push OPERATING to read ENG 1... Push OPERATING - light illuminates.
Page 8	Addition of Altimeters step for incorporation of RVSM. (moved from Page 21). Changed ENG CMPTER, RUDDER BIAS & T/R to read Engine Computer, Rudder Bias & T/R. Deleted NOTE of reference to APU operation.
Page 9	Added Transponders step for incorporation of RVSM. Changed Flying controls to read Flight controls. Added engine ITT NOTE to CRUISE CHECKS.
Page 11	Added reference to CAT II operation location.

LOG OF REVISIONS (Continued)

Section & Page	***Description***
Page 12	Deleted short turnaround block statement at the beginning of SHUTDOWN CHECKS. Deleted NOTE of reference to APU operation. *NOTE: Revision bars appear to the left of the affected box text.* Left Box: Changed ENG CMPTERS to read ENG CMPTRS. Right Box: Revised text to read as follows - No. 1 MAIN AIR VLV to read MAIN AIR VLV 1 No. 1 HP COCK to read HP COCK 1 No. 1 Fuel pump to read L PUMP (fuel) No. 1 ENG CMPTER to read ENG CMPTR 1
Page 13	In block statement, deleted reference to INTERNAL CHECKS. *NOTE: Revision bars appear to the right of the affected box text.* Left Box: Deleted NOTE of reference to APU operation. Changed Flying Controls to read Flight controls. Right Box: Revised text to read as follows - No. 2 MAIN AIR VLV to read MAIN AIR VLV 2 No. 2 HP COCK to read HP COCK 2 No. 2 Fuel pump to read R PUMP (fuel) No. 2 ENG CMPTER to read ENG CMPTR 2 Changed Flying Controls to read Flight controls Incorporated Temporary Change TC2 with additional information for GROUND HANDLING CHECKLIST.
Page 14	Added continuation arrow at the footer of the page.
Page 15	Added header EGPWS PRE-FLIGHT CHECKS (continued). Added continuation arrow at the footer of the page.
Page 16	Added header TCAS CHECKS (continued). Added continuation arrow at the footer of the page.
Page 17	Added header TCAS CHECKS (continued).
Page 18	Added RVSM CHECKS (moved from Page 21).

LOG OF REVISIONS (Continued)

Section & Page	***Description***
Page 19	Changed FAN...NORM to read FAN...As required Added continuation arrow at the footer of the page.
Page 20	Added header TAKEOFF and LANDING at AIRFIELDS ABOVE 9000 ft FIELD PRESSURE ALTITUDE (continued). Corrected typo of "field pressure pressure altitude" to read "field pressure altitude". Added continuation arrow at the footer of the page.
Page 21	Added header TAKEOFF and LANDING at AIRFIELDS ABOVE 9000 ft FIELD PRESSURE ALTITUDE (continued). Moved RVSM CHECKS to page 18. (certain steps have been incorporated into previous procedures of this Sub-section).
Section 5 Sub-section 5.05 GENERAL	Pages 5 & 6 and Pages 13 thru 22 are replaced in this revision. Pages which are replaced, but have no revision bars are not listed on this Log of Revisions and are replaced for a new company header only with no technical changes.
Page 5	Deleted hyphen in "take-off" to read "takeoff".
Page 13	Under Air Conditioning: Deleted hyphen from first "take-off" to read takeoff. Under Landing Gear: Deleted hyphen from "take-off" to read "takeoff". Under Flap Settings: Changed Take-Off and Second Segment Climb to read Takeoff and Second Segment Climb. Changed upper case “O” in Final Take-Off Climb to lower case to read Final Take-off Climb.
Pages 15	Under Operation In High Surface Winds: Changed (10 meters) to read (10.1 meters) Deleted hyphen from "take-off" to read "takeoff" (2 places). Under Maximum Demonstrated Crosswind: Changed (10 meters) to read (10.1 meters) Under Critical Engine: Deleted hyphen from "take-off" to read "takeoff".
Page 17	Changed “stalling speeds” to read “stall speeds”. (same change in graph title) Added hyphen to POWER-OFF in graph title.
Page 19	Deleted hyphen from "Take-off" to read "Takeoff".
Page 21	Change 10,000 ft. to read 14,000 ft.
Page 22	Addition and deletion of text information for Static Position Error Correction to ESIS Altitude.

LOG OF REVISIONS (Continued)

Section & Page	*Description*
Section 6 **WEIGHT & BALANCE**	Pages 5, 6,10, 15 and 17 of Section 6 are replaced in this revision.
Page 5	Under CONVERSION FACTORS Changed value of 4.8824 Pounds/Foot^2 to read 0.2048 Pounds/Foot^2
Page 6	Under Weight Limitations Moved Minimum Wing Fuel Load Recommendation to Pages 15 & 17 as a NOTE. Under Maximum Cabin Floor Loading Changed the following values: (12 kg/m^2) to read (293 kg/m^2) and (10 kg/m^2) to read (244 kg/m^2)
Page 10	Added increment marks to the top and bottom of graph.
Pages 15 & 17	Inserted moved data, from Page 6, as a NOTE.

Approved By: ......Tina J. Miller......

Margaret Kline, Manager
Aircraft Certification Office
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Approval Date: ......3/22/05......

A3

LOG OF REVISIONS

Serials 258541, 258556, 258567 and After

FAA Approved Airplane Flight Manual
P/N 140-590032-0005
for
AIRPLANES EQUIPPED WITH COLLINS PRO LINE 21 AVIONICS
Revision A2: February 27, 2004

LOG OF REVISIONS

Section & Page	*Description*
Title & Logo Pages	Revised company logo to Raytheon Aircraft Company.
List of Effective Pages Pages 1 thru 7	Updated for Revision A2.
Log of Revisions Page 1 of 1	Issued for Revision A2.
SECTION 5 **Sub-section 5.15**	
Page 1	Revised company logo to Raytheon Aircraft Company. Removed Page listing for Figure with Nose tire speed limit 190 mph.
Page 2	Revised company logo to Raytheon Aircraft Company. Revised text reference for nosewheel tires limited to 190 mph.
Page 3	Revised company logo to Raytheon Aircraft Company, no technical change.
Page 4	Revised company logo to Raytheon Aircraft Company, no technical change.
Page 5	Revised company logo to Raytheon Aircraft Company. Replaced Figure 5.15.2 for MAXIMUM TAKE-OFF WEIGHT FOR ALTITUDE AND TEMPERATURE (Nose tire speed limit 190 mph) with existing Figure 5.15.3 for MAXIMUM TAKE-OFF WEIGHT FOR ALTITUDE AND TEMPERATURE (Nose tire speed limit 210 mph)
	A2

LOG OF REVISIONS
(Continued)

Section & Page	***Description***
Page 6	Revised company logo to Raytheon Aircraft Company. New pagination eliminates the old Figure 5.15.3.
Temporary Change 8	Removed and destroyed TEMPORARY CHANGE, P/N 140-590032-0005TC8 facing Page 6.
SECTION 5 Sub-section 5.20	
Pages 1 and 2	Revised company logo to Raytheon Aircraft Company.
Page 3	Deleted hyphen from text of take-offs to read takeoffs. Revised company logo to Raytheon Aircraft Company.
Page 4	Deleted hyphen from text of take-off to read takeoff. Revised company logo to Raytheon Aircraft Company.
Pages 5 thru 24	Revised 0° Flaps Take-off data and inserted hypen in TAKE-OFF of all Sub-section titles. Revised company logo to Raytheon Aircraft Company.
SECTION 5 Sub-section 5.50	
Pages 1	Revised company logo to Raytheon Aircraft Company. Added Operational Factor Adjustments for Landing Distance.
Page 2	Revised company logo to Raytheon Aircraft Company.
Page 3	Addition of text for new Figure 5.20.2. Changed Figure number references.
Page 4	Addition of instruction text for new Figure 5.50.2. Changed Figure number references.
Page 5	Figure number reference changes. Information shift.
Page 6	Addition of new page for required pagination.
Page 7	Addition of new page for relocation of Figure 5.50.1.
Page 8	Addition of new Figure 5.50.2 for OPERATIONAL FACTOR ADJUSTMENTS FOR LANDING DISTANCE.

LOG OF REVISIONS

(Continued)

Section & Page	*Description*
Page 9	Addition of new page and Figure number for required pagination.
Page 10	Addition of new page and Figure number for required pagination.
	Approved By:.. Ronald K. Rathgeber, Manager Aircraft Certification Office Federal Aviation Administration Wichita, Kansas USA Approval Date: 2/27/04

LOG OF REVISIONS

Serials 258541, 258556, 258567 and After

FAA Approved Airplane Flight Manual
P/N 140-590032-0005
for
AIRPLANES EQUIPPED WITH COLLINS PRO LINE 21 AVIONICS

Revision A1: November 13, 2002

LOG OF REVISIONS

Section & Page	***Description***
Title & Logo Pages	Changed Export Statement on Logo Page.
List of Effective Pages Pages 1 thru 7	Updated for Revision A1.
Log of Revisions Pages 1 thru 11	Issued for Revision A1.
Section 1	
Page 1	Updated Table of Contents for page numbering.
Page 3	Changed wording of Proline to Pro Line. Format change, indented bullets.
Page 4	Format change, indented note.
Page 5	Format change, indented note.
Page 6	Updated information for revision service.
Page 7	Format change, indented note.
Page 9	Changed wording of Proline to Pro Line. Format change, indented bullets.
Page 10	Format change, indented bullets.
Page 11	Removed hyphen from co-pilot and changed wording of Proline to Pro Line.
Pages 13, 14, 15	Addition and deletion of abbreviations and acronyms.
Page 16, 17, 18, 19	No changes, newly created pages.
Section 2	
Page 2	Addition of System Gage Markings.

A1

LOG OF REVISIONS
(Continued)

Section & Page	***Description***
Section 2 continued	
Page 3	Format change, bullets indented. Added parentheses for conformity.
Page 4	Format change, bullets and notes indented. Changed parentheses for conformity.
Page 5	Changed parentheses for conformity.
Page 9	Format change, bullets and note indented, provided space between degree symbols and C.
Page 10	Format change, bullets and note indented.
Page 11	Format change, notes indented and provided spaces between degree symbols and C.
Page 12	Changed wording of Engine Instrument Markings and Thrust Reversers wording "rearwards to backwards". Format change, bullets indented.
Page 14	Format change, notes indented.
Page 15	Format change, provided spaces between degree symbols and C.
Page 16	Incorporation of Temporary Change P/N 140-5900032-0005TC3 and format change, indented note.
Page 17	Format change, indented bullets.
Page 18	Changed wording of item 5 - 4th bullet. Format changes, bullets and note indented.
Page 19	Changed wording for AUTOPILOT item 1. Also format change, indented bullets.
Page 20	Changed wording of VNAV, item 5. Addition of item 6.
Page 21	Changed wording of EGPWS items 3 & 4, from GPWS TERR INHIBIT to TERR INHIB. Format change, note indented.
Page 22	Format change, indented text and note.
Page 23	Format change, indented text and provided spaces between degree and C.
Page 25	Changed wording of supernumerary to 3rd crew member. Format change, note indented.

LOG OF REVISIONS

(Continued)

Section & Page	***Description***
Section 2 continued	
Page 26	Addition of System Gage Markings. Re-located After Normal Landing text from page 27.
Page 27	Deletion of commas below 10,000 ft, addition of commas to some Take-off Weight values and re-formatted table presentation. No data change.
Section 3	
Page 3	Punctuation change, addition of (period) following FLAPS procedure.
Page 4	Punctuation change, addition of (periods). Format change, notes indented.
Page 5	Format change, notes indented.
Page 6	Punctuation change, addition of (periods). Format change, notes indented.
Page 8	Punctuation change, addition of (periods). Also upper cased M_{MO} and format change, note indented.
Page 9	Changed annunciator presentations from "and/or" to read "and". Changed Note 1, FLAPS to lower case text of flaps. Also "minimum" landing weight to read "maximum" landing weight. Format change, notes indented.
Page 11	Format change, notes indented.
Page 12	Format change, note indented. Punctuation change, addition of (period).
Page 13	Punctuation change, removed dash. Format change, notes indented.
Page 14	Punctuation change, addition of (period).
Page 15	Format change, notes indented. Also removed hyphen from Copilot.
Page 16	Punctuation change, addition of (period). Format change, notes indented.
Page 17	Punctuation change, addition of (period). Incorporation of Temporary Change P/N 140-590032 0005TC5
Page 18	Changed circuit breaker panel identification. Format change, note indented.

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(Continued)

Section & Page	*Description*
Section 3 continued	
Page 19	Changed circuit breaker panel identification. Format change, notes indented.
Page 21	Punctuation change, addition of (period). Format change, note indented. Addition of DA-A circuit breaker panel identification. Addition of Copilot’s Audio Panel to list of inoperative components.
Page 22	Format change, note indented. Punctuation change, addition of (period).
Page 23	Format change, note indented. Punctuation change, addition of (period).
Page 24	Format change, note indented.
Page 25	Punctuation change, addition of (periods), changed wording of Captain to Pilot. Format change, notes indented.
Page 26	Punctuation change, addition of (periods). Format change, notes indented.
Page 27	Format change, bullets indented.
Page 29	Punctuation change, addition of (period). Format change, notes indented.
Page 31	Punctuation change, addition of (periods). Format change, notes indented.
Page 32	Changed wording of "free-stick" to read "stick-free". Format change, note indented.
Page 33	Format change, note indented.
Page 34	Format change, note indented.
Page 37	Changed wording of Captain and First Officer to read pilot and copilot. Changed comma to hyphen for manual conformity. Format change, notes indented.
Section 4 Sub-section 4.05	
Page 1	Reworded format of ENGINE RELIGHT ENVELOPE.
Page 2	Changed wording of OUT OF TRIM WARNING to reflect wording on page 27 and added RVSM data.

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(Continued)

Section & Page	***Description***
Sub-section 4.05 continued	
Page 5	Format change, note indented and provided a space between the degree mark and C.
Page 6	Format change, note indented and provided a space between the degree mark and C. Punctuation change, addition of (period).
Page 7	Punctuation change, addition of (period). Format change, note indented and provided a space between the degree mark and C.
Page 8	Format change, note indented.
Page 9	Punctuation change, addition of (periods). Format change, note indented and provided a space between the degree mark and C.
Page 10	Punctuation change, addition of (period).
Page 11	Format change, bullets indented.
Page 13	Format change, note indented.
Page 14	Format change, notes indented.
Page 15	Punctuation change, addition of (period). Format change, notes indented.
Page 18	Format change, note indented.
Page 20	Format change, note indented. Added period.
Page 21	Format change, note indented.
Page 23	Punctuation change, addition of (periods). Format change, note indented
Page 24	Format change, provided a space between (300 AMPS)
Page 25	Format change, notes indented.
Page 28	Format change, notes indented.
Page 29	Format change, notes indented. Corrected WARNING spelling of AIRSPEED.
Page 31	Changed wording of "If Stick Shake Persist" procedure. Punctuation change, addition of (periods). Format change, notes indented.
Page 33	Punctuation change, addition of (periods). Format change, notes indented.

LOG OF REVISIONS
(Continued)

Section & Page	*Description*
Sub-section 4.05 continued	
Page 34	Punctuation change, addition of (periods). Format change, note indented.
Page 37	Format change, note indented.
Page 39	Format change, bullets indented and addition of (period).
Page 40	Punctuation change, addition of (period). Format change, notes indented.
Page 41	Format change, note indented.
Page 42	Format change, note indented.
Page 43	Addition of RVSM data and format change, bullets indented.
Page 44	Changed wording of "EMERG RADIO" procedure. Format change, notes and bullets indented.
Page 45	Changed wording of "free-stick" to read "stick-free". Format change, notes and bullets indented.
Page 46	Changed "Radar Altimeter" to read "Radio Altimeter". Changed Fan Failure During Taxi and During Flight procedures.
Page 48	Changed FD comparator procedure.
Page 50	Changed wording of GLIDESLOPE procedure by changing OVRD to INHIB. Change FLAP OVRD to uppercase.
Sub-section 4.10	
Page 1	Addition of RVSM CHECKS and updated Table of Contents for page numbering.
Page 2	Format change, note indented.
Page 3	Format change, note indented. Punctuation change, addition of (periods).
Page 4	Format change, note indented and provided a space between the degree mark and C.
Page 5	Punctuation change, addition of (periods). Re-located CVR - Test procedure from BEFORE TAKE-OFF CHECKS.
Page 6	Punctuation change, addition of (period).
Page 7	Format change, note indented, provided space between degree symbols and C.

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(Continued)

Section & Page	***Description***
Sub-section 4.10 continued	
Page 8	Moved CVR - Test procedure from BEFORE TAKE-OFF CHECKS and re-located to BEFORE START CHECKS. Format change, notes indented.
Page 9	Punctuation change, addition of (period) and format change, note indented.
Page 10	Addition of note for fuel flow indication.
Page 11	Format change, note indented. Punctuation change, addition of (period).
Page 12	Format change, note indented.
Page 14	Format change, notes indented.
Page 15	Format change, note indented.
Page 16	Format change, note indented.
Page 17	Punctuation change, addition of (periods). Format change, note indented.
Page 18	Changed "Radar Altitude" to read "Radio Altitude". Punctuation change, addition of (period). Format change, notes indented.
Page 19	Punctuation change, addition of (period).
Page 20	Punctuation change, addition of (period).
Page 21	Addition of RVSM checks and format change, note indented.
Section 5 **Sub-section 5.05**	
Pages 7, 8 & 9	Format change, provided a space between the degree mark and C.
Page 10	Format change, notes indented.
Pages 11 & 12	Bolded Altitude column figures.
Page 13	Format change, note and bullets indented.
Page 14	Format change, provided a space between the degree mark and C. Note indented.
Page 19	Changed "20 ° C" to read "20 °".

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Section & Page	*Description*
Sub-section 5.05 continued	
Page 21	Inserted text from Position and Compressibility Error Correction to Airspeed Altimeter (page 22). Format change, notes and bullets indented.
Page 22	Removed text and inserted into POSITION ERROR CORRECTIONS (page 21)
Page 26	Incorporation of Temporary Change P/N 140-5900032-0005TC4.
Page 27	Addition of STATIC POSITION ERROR CORRECTION TO ALTIMETER graph above 29,000 ft for RVSM.
Sub-section 5.10	
Page 3	Format change, note indented.
Page 4	Format change, note and bullets indented.
Sub-section 5.15	
Page 2	Format change, note and bullets indented.
Sub-section 5.20	
Page 4	Format change, note indented.
Page 5	Format change, enlarged graph for clarity.
Pages 23 & 24	Format change, enlarged graph for clarity.
Pages 41 & 42	Format change, enlarged graph for clarity.
Sub-section 5.25	
Page 4	Format change, bullets indented.
Page 5	Format change, bullets indented and provided a space between the degree mark and C.
Page 6	Format change, bullets indented and provided a space between the degree mark and C.
Page 8	Format change, notes and bullets indented and provided a space between the degree mark and C.
Page 11	Format change, notes and bullets indented and provided a space between the degree mark and C.
Page 12	Format change, notes and bullets indented and provided a space between the degree mark and C.

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Section & Page	*Description*
Sub-section 5.25 continued	
Page 15	Format change, notes and bullets indented and provided a space between the degree mark and C.
Page 16	Format change, bullets indented.
Page 18	Format change, bullets indented.
Page 20	Format change, bullets indented.
Page 22	Format change, bullets indented.
Sub-section 5.40	
Page 2	Format change, bullets indented.
Sub-section 5.45	
Page 2	Format change, notes and bullets indented and provided a space between the degree mark and C.
Sub-section 5.50	
Page 3	Format change, notes and bullets indented and provided a space between the degree mark and C.
Page 4	Format change, notes and bullets indented.
Sub-section 5.55	
Page 1	Changed page numbering for additional pages.
Page 4	Format change, notes and bullets indented.
Page 8	Format change, notes and bullets indented and provided a space between the degree mark and C.
Page 12	Format change, notes and bullets indented and provided a space between the degree mark and C.
Page 13	Changed page color to pink for 0° flaps.
Page 14	Additional page for backup to new pink page 13.
Page 15	Additional page for new pagination.
Page 16	Format change, notes and bullets indented and provided a space between the degree mark and C.
Page 17	Change of page numbering only.

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Section & Page	***Description***
Sub-section 5.55 continued	
Page 18	Change of page numbering, note and bullets indented and provided a space between the degree mark and C.
Page 19	Change of page numbering only.
Section 6	
All even numbered left pages 2 - 30	Format change, corrected footer font size at the right side of all left pages.
Page 1	Changed wording "Licensed" to read "Certificated".
Page 3	Changed wording "Licensed" to read "Certificated".
Page 5	Format change, bullets indented.
Page 6	Commas removed from numbers below 10,000. Format change, note indented and re-aligned leader margins.
Page 8	Format change, note indented.
Page 11	Format change, note indented.
Page 12	Format change, note indented.
Page 14	Commas removed from numbers below 10,000 and re-aligned data to right side of columns.
Page 15	Punctuation change, addition of periods, commas removed from numbers below 10,000 and re-aligned data to right side of columns.
Page 16	Punctuation change, commas removed from numbers below 10,000 and re-aligned data to right side of columns.
Page 17	Punctuation change, addition of periods, commas removed from numbers below 10,000 and re-aligned data to right side of columns.
Page 18	Format change, note indented.
Page 23	Punctuation change, commas removed from numbers below 10,000.
Page 24	Changed "Unit #1 to read Unit #2
Page 28	Changed wording "Licensed" to read "Certificated".

LOG OF REVISIONS

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Section & Page	*Description*
	Approved By: .... for Ronald K. Rathgeber, Manager Aircraft Certification Office Federal Aviation Administration Wichita, Kansas USA Approval Date: 11/13/02

LOG OF REVISIONS

Hawker 800XP

Serials 258541, 258556, 258567 and After

FAA Approved Airplane Flight Manual

P/N 140-590032-0005

Original Issue: Nov 30, 2001

for

AIRPLANES EQUIPPED WITH COLLINS PRO LINE 21 AVIONICS

Section & Page	Description
All Sections and Pages	Original Issue. Refer to the List Of Effective Pages. Approved By: DM Baker Ronald K. Rathgeber, Manager Aircraft Certification Office Federal Aviation Administration Wichita, Kansas USA Approval Date: 11/30/01 A

SECTION 1

GENERAL

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INTRODUCTION

This FAA-approved Airplane Flight Manual must be carried onboard the airplane during flight operations. It contains the information required by 14 CFR Part 25 for safe operation of the Hawker 800XP airplane equipped with Collins Pro Line 21 avionics.

It shall be the responsibility of the owner/operator to make sure the latest revisions of publications referenced in this Airplane Flight Manual are utilized during operation, servicing and maintenance of the airplane.

The following documents must be carried onboard the airplane at all times:

- Collins Pro Line 21 Avionics System for the Hawker 800XP Pilot's Guide P/N 523-0780409, 1st Edition dated May 31, 2001 or later revision.
- Collins FMS-6000 Flight Management System for the Hawker 800XP Pilot's Guide, P/N 523-0780705, 1st Edition dated April 17, 2001 or later revision.
- Mk V Enhanced Ground Proximity Warning System Pilot Guide, P/N 060-4241-0000, Rev D, dated March 2000 or later revision.

These publications contain the description and operation of the Collins Pro Line 21 avionics, the FMS-6000, TCAS II and EGPWS installations and must be available for use.

IMPORTANT NOTICE

This manual should be read carefully by the owner and the operator in order to become familiar with the operation of the airplane. Suggestions and recommendations have been made within it to aid in obtaining maximum performance without sacrificing economy. Be familiar with, and operate the airplane in accordance with, the FAA-approved Airplane Flight Manual and/or placards which are located in the airplane. This manual includes the material required to be furnished to the pilot by the Federal Aviation Regulations.

As a further reminder, the owner and the operator should also be familiar with the Federal Aviation Regulations applicable to the operation and maintenance of the airplane. Further, the airplane must be operated and maintained in accordance with FAA Airworthiness Directives which may be issued against it.

The Federal Aviation Regulations place the responsibility for the maintenance of this airplane on the owner and operator, who should make sure that all maintenance is done by qualified mechanics in conformity with all airworthiness requirements established for this airplane.

All limits, procedures, safety practices, time limits, servicing and maintenance requirements contained in this manual are considered mandatory for continued airworthiness and to maintain the airplane in a condition equal to that of its original manufacture.

Raytheon Aircraft Authorized Outlets can provide recommended modification, service and operating procedures issued by both the FAA and Raytheon Aircraft, which are designed to get maximum utility and safety from the airplane.

WARNING: USE ONLY GENUINE RAYTHEON AIRCRAFT OR RAYTHEON AIRCRAFT APPROVED PARTS OBTAINED FROM RAYTHEON APPROVED SOURCES, IN CONNECTION WITH THE MAINTENANCE AND REPAIR OF HAWKER AIRPLANES.

GENUINE RAYTHEON AIRCRAFT PARTS ARE PRODUCED AND INSPECTED UNDER RIGOROUS PROCEDURES TO MAKE SURE AIRWORTHINESS AND SUITABILITY FOR USE IN HAWKER AIRPLANE APPLICATIONS. PARTS PURCHASED FROM SOURCES OTHER THAN RAYTHEON AIRCRAFT, EVEN THOUGH OUTWARDLY IDENTICAL IN APPEARANCE, MAY NOT HAVE HAD THE REQUIRED TESTS AND INSPECTIONS PERFORMED, MAY BE DIFFERENT IN FABRICATION TECHNIQUES AND MATERIALS, AND MAY BE DANGEROUS WHEN INSTALLED IN AN AIRPLANE.

SALVAGED AIRPLANE PARTS, REWORKED PARTS OBTAINED FROM NON-RAYTHEON AIRCRAFT APPROVED SOURCES, OR PARTS, COMPONENTS, OR STRUCTURAL ASSEMBLIES, THE SERVICE HISTORY OF WHICH IS UNKNOWN OR CANNOT BE AUTHENTICATED, MAY HAVE BEEN SUBJECTED TO UNACCEPTABLE STRESSES OR TEMPERATURES OR HAVE OTHER HIDDEN DAMAGE NOT DISCERNIBLE THROUGH ROUTINE VISUAL OR USUAL NON DESTRUCTIVE TESTING TECHNIQUES. THIS MAY RENDER THE PART, COMPONENT OR STRUCTURAL ASSEMBLY, EVEN THOUGH ORIGINALLY MANUFACTURED BY RAYTHEON AIRCRAFT, UNSUITABLE AND UNSAFE FOR AIRPLANE USE.

RAYTHEON AIRCRAFT EXPRESSLY DISCLAIMS ANY RESPONSIBILITY FOR MALFUNCTIONS, FAILURES, DAMAGE OR INJURY CAUSED BY USE OF NON-RAYTHEON AIRCRAFT APPROVED PARTS.

USE OF THE AIRPLANE FLIGHT MANUAL

WARNINGS, CAUTIONS and NOTES

The following definitions apply to WARNINGS, CAUTIONS and NOTES found throughout the manual.

WARNING: OPERATING PROCEDURES, TECHNIQUES, etc., WHICH COULD RESULT IN PERSONAL INJURY OR LOSS OF LIFE IF NOT CAREFULLY FOLLOWED.

CAUTION: OPERATING PROCEDURES, TECHNIQUES, etc., WHICH COULD RESULT IN DAMAGE TO EQUIPMENT IF NOT CAREFULLY FOLLOWED.

NOTE: An operating procedure, technique, etc., which is advisory in nature and considered essential to emphasize.

REVISING THE AIRPLANE FLIGHT MANUAL

The Airplane Flight Manual is designed to facilitate maintaining the documents necessary for the safe and efficient operation of the airplane. The manual has been prepared in loose-leaf form for ease of maintaining and incorporates quick-reference tabs imprinted with the title for each section.

NOTE: In an effort to provide as complete coverage as possible, applicable to any configuration of the airplane, some optional equipment has been included in the scope of the manual. However, due to the variety of airplane appointments and arrangements available, optional equipment described or depicted herein may not be designated as such in every case.

Immediately following the Title Page is a LIST OF EFFECTIVE PAGES. A complete listing of all pages is presented along with the current status of the material contained; i.e. Original, Reissued or Revised.

A reissue of the manual or the revision of any portion will be received with a new LIST OF EFFECTIVE PAGES to replace the previous one. Reference to the LIST OF EFFECTIVE PAGES allows the user to determine the current issue, revision or reissue in effect for each page in the manual, except for the Supplement Section.

When the manual is originally issued, and each time it is revised or reissued, a new LOG OF REVISIONS page is provided and is to be filed in front of the manual immediately following the LOG OF TEMPORARY CHANGES. All LOG OF REVISIONS pages must be retained until the manual is reissued. A capital letter in the lower right corner of the LOG OF REVISIONS page designates the Original Issue ("A") or reissue ("B", "C", etc.) covered by the LOG OF REVISIONS page.

If a number follows the letter, it designates the sequential revision (1st, 2nd, 3rd, etc.) to the Original Issue or reissue covered by the LOG OF REVISIONS page. Reference to the LOG OF REVISIONS page provides a record of changes made since the Original Issue or the latest reissue.

The portion of text or illustration which has been revised by the addition, deletion or change in information is identified by a solid revision bar located adjacent to the area of change along the outside margin of the effected page.

TEMPORARY CHANGES

These changes are printed on yellow paper and are issued to all airplanes. Temporary Changes provide information of an urgent matter which must be incorporated into the AFM in advance of the revision procedure.

The changes made by a Temporary Change will be incorporated into the main manual at the time of the next manual revision or reissue with the Temporary Change being cancelled at that time. Each issued Temporary Change will be accompanied by a current LOG OF TEMPORARY CHANGES which replaces the existing log.

This log provides the current status of all Temporary Changes issued to the Airplane Flight Manual and shall be filed in the front of the manual immediately in front of the latest LOG OF REVISIONS.

INSTRUCTION SHEET

An INSTRUCTION SHEET will be provided for each reissue or revision of the Airplane Flight Manual. The heading of the INSTRUCTION SHEET identifies the publication action and part number of the affected Airplane Flight Manual. The body of the INSTRUCTION SHEET lists all effected pages of the reissue or revision with instructions for incorporating the action. After compliance, this INSTRUCTION SHEET may be discarded.

REVISION SERVICE

The following publications will be provided, at no charge, to the registered owner/operator of this airplane.

1. Reissues and revisions of the FAA-approved Airplane Flight Manual.

2. Original issues and revisions of FAA-approved Airplane Flight Manual Supplements.

3. Original issues and revisions of Raytheon Aircraft Service Bulletins.

The above publications will be provided to the registered owner/operator at the address listed on the FAA Aircraft Registration Branch List or the Raytheon Aircraft Domestic/International Owners Notification List. Further, the owner/operator will receive only those publications pertaining to the registered airplane serial number.

For detailed information on how to obtain "Revision Service" applicable to this manual or other Raytheon Aircraft Service Publications, refer to the latest revision of Raytheon Aircraft Service Bulletin SB 00-2001 or visit the web site at: http:www.raytheonaircraft.com/support/pubs/publications.asp

Raytheon Aircraft Company expressly reserves the right to supersede, cancel and/or declare obsolete, without prior notice, any part, part number, kit or publication referenced in this manual.

The owner/operator should always refer to all supplements for possible placards, limitations, emergency, abnormal, normal and other operational procedures for proper operation of the airplane with optional equipment installed.

WARNING: IT SHALL BE THE RESPONSIBILITY OF THE OWNER/OPERATOR TO MAKE SURE THAT THE LATEST REVISIONS OF PUBLICATIONS REFERENCED IN THIS MANUAL ARE UTILIZED DURING OPERATION, SERVICING AND MAINTENANCE OF THE AIRPLANE.

SUPPLEMENTS

When a new airplane is delivered from the factory, the manual delivered with it contains either an FAA-approved Supplemental Type Certificate (STC) supplement or an FAA-approved Raytheon Aircraft Flight Manual Supplement for every installed item requiring a supplement.

If a new manual for operation of the airplane is obtained at a later date, it is the responsibility of the owner/operator to make sure that all required supplements (as well as Weight and Balance and other pertinent data) are transferred into the new manual.

AIRPLANE FLIGHT MANUAL SUPPLEMENTS REVISION RECORD

Section 7, SUPPLEMENTS, contains FAA-approved Airplane Flight Manual Supplements, headed by a LOG OF SUPPLEMENTS page. On the LOG page is a listing of the FAA-approved Supplemental Equipment available for installation on the airplane.

When new supplements are received or existing supplements are revised, a new LOG page will replace the previous one, since it contains a listing of all previous approvals, plus the new approval. The supplemental material will be added to the section in accordance with the sequence specified on the LOG page.

NOTE: Upon receipt of a new or revised supplement, compare the existing LOG page in the manual with the corresponding applicable LOG page accompanying the new or revised supplement.

It may occur that the LOG page already in the manual is dated later than the LOG page accompanying the new or revised supplement. In any case, retain the LOG page having the later date and discard the older LOG page.

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CONTENTS

SECTION 1 - GENERAL

This section provides manual introduction, contents and general information of the Hawker 800XP airplane equipped with Collins Pro Line 21 avionics.

SECTION 2 - LIMITATIONS

This section provides FAA-approved limitations necessary for the safe operation of the Hawker 800XP airplane equipped with Collins Pro Line 21 avionics. This airplane is eligible for certification in the Transport Category and is approved for the following kinds of operation when the appropriate instruments and equipment required by the airworthiness and/or operating certificate are installed and approved and are in operable condition.

- Atmospheric icing conditions
- Day and night VFR
- IFR

However, the certificate of airworthiness may restrict this airplane to some other category and to a particular use.

SECTION 3 - EMERGENCY PROCEDURES

The emergency procedures contained in this section have been developed and recommended by the manufacturer for use in the operation of this airplane.

Emergency conditions may occur when different combinations of events are encountered. Some emergency conditions may require use of multiple procedures, depending on the situation.

These procedures are for guidance only in identifying acceptable operating procedures for known emergency conditions and require the use of special systems or the alternate use of regular systems in order to protect the occupants and the airplane from serious or critical harm.

In these procedures, it is assumed that the positions of the pilot and copilot are as follows:

Pilot - Occupying the left crew seat.
Copilot - Occupying the right crew seat.

Memory Items

Steps to be memorized and requiring immediate action by the flight crew are provided in bold print within a red hashed memory box:

Memorized steps requiring immediate action by the flight crew

Annunciators

Throughout the procedural sections of this Airplane Flight Manual, annunciators are provided as shown below:

EMERGENCY	ABNORMAL	ADVISORY
OIL 1 LO PRESS	**HYD 1 LO PRESS**	**STBY INV ON**

- MWS annunciators located on the overhead roof panel are provided on the left side of the page.

**FUEL 1
LO PRESS**

- Annunciators located on the main MWS panel are provided on the right side of the page.

**MAIN AIR
VALVE 2**

- Annunciators located elsewhere are provided in the middle of the page.

REVRS

The MWS panel also provides repeater annunciators which have an upward pointing arrow.

When illuminated, these annunciators indicate to the flight crew that an additional warning annunciator has illuminated on the overhead roof panel.

**ENG 1 ↑
FIRE**

An illustration of the red Master Warning System lamps on the glareshield is not provided.

It is expected that the flight crew are familiar with the need to push either of the lamps to acknowledge a new indication and cancel audible warnings to enhance flight crew coordination.

SECTION 4 - ABNORMAL / NORMAL PROCEDURES

Details of airplane procedures essential to achieve the performance standard for abnormal and normal operations are given in Section 4, Sub-sections 4.05 Abnormal Procedures and 4.10 Normal Procedures.

Sub-section 4.05 - ABNORMAL PROCEDURES

The abnormal procedures in this section are recommended by the manufacturer and approved by the FAA for use in the operation of this airplane. These procedures require the use of special systems or the alternate use of regular systems to maintain an acceptable level of airworthiness or reduce operational risk resulting from a failure condition.

Usually these procedures do not require immediate flight crew action and are not intended for use when the airplane is intentionally operated from takeoff to landing with a known inoperative system. In these procedures, it is assumed that the positions of the pilot and copilot are as follows:

Pilot - Occupying the left crew seat.
Copilot - Occupying the right crew seat.

Sub-section 4.10 - NORMAL PROCEDURES

The operating procedures in this section are recommended by the manufacturer and approved by the FAA for use in the operation of this airplane. These procedures are for guidance only in identifying acceptable, normal operating procedures and are not to be considered mandatory or in any way construed to prohibit an operator from developing equivalent FAA-approved procedures.

SECTION 5 - PERFORMANCE

The performance information provided in this section relates to a Hawker 800XP airplane equipped with Collins Pro Line 21 avionics and powered by two Allied-Signal TFE731-5BR-1H turbofan engines with an Automatic Power Reserve system (APR). It is the responsibility of the operator to observe the limiting conditions specified.

Standard Condition of Airplane

The surface finish should be average gloss with condition and fit of joints, panels, anti-icing equipment, doors and other externally mounted items being generally good. The approved flap settings are listed under CONFIGURATION in Sub-section 5.05.

Procedures and Information

Details of the airplane procedures essential to achieve the performance standard of this Section for normal and abnormal operations are given in Sub-sections 4.05 Abnormal Procedures and 4.10 Normal Procedures.

Performance

The take-off performance information in this section is not valid unless the Automatic Power Reserve system (APR) is operative and armed for takeoff.

NOTE: Throughout Section 5, wherever engine antice bleed is referred to, it shall be taken to read engine intake ice protection bleed.

SECTION 6 - WEIGHT & BALANCE

The data within this section is intended to make sure that the airplane is operated within the appropriate weight and center of gravity limitations. The "Basic Empty Weight and Balance - As Licensed" and "Equipment List" are not FAA Approved.

SECTION 7 - SUPPLEMENTS

When items or systems have been installed in the airplane and not included in the main sections of this Airplane Flight Manual, this section will contain the FAA-approved supplemental data required for safe operation of this airplane. Each supplement, TC or STC, will have an assigned part number.

ABBREVIATIONS and ACRONYMS

The use of capital letters in the text, apart from normal grammatical usage, indicates the actual markings of equipment, gauges, controls and control positions on the airplane.

Abbreviations and acronyms used in this manual have the following meanings:

AC or ac	Alternating Current
ADC	Air Data Computer
ADF	Automatic Direction Finder
ADS	Air Data System
AFD	Adaptive Flight Display
AGL or agl	Above Ground Level
AHRS	Attitude Heading Reference System
AMP or amp	Ampere(s)
ANTICE	Anti Icing System
ALT	Altitude
ALTN	Alternative
AMSL	Above Mean Sea Level
AOA	Angle Of Attack
AP	Autopilot
APPR	Approach
APR	Automatic Performance Reserve
APR ON	APR system must be serviceable and armed for takeoff
APU	Auxiliary Power Unit
ARTE	Above Runway Threshold Elevation
ASDA	Accelerate-Stop Distance Available
ASEL	Altitude Select
ASI	Air Speed Indicator
ASIR	Air Speed Indicator Reading
ATC	Air Traffic Control
ATT	Attitude
AUX	Auxiliary
BITE	Built-In Test Equipment
BRK	Brake
BUS TIE	Bus Bar Tie
° C	degrees Celsius, centigrade scale
CAS	Calibrated Air Speed
CAU	Cold Air Unit
CB or cb	Circuit Breaker
CDU	Control Display Unit
CMPTER	Reference to Engine Computer annunciator
CMPTR	Reference to Engine Computer selector switches
COMM	Communication
CTL	Controller
CVR	Cockpit Voice Recorder
DC or dc	Direct Current
DCP	Display Control Panel
DCU	Data Concentrator Unit
DH	Decision Height
DME	Distance Measuring Equipment
DR	Dead Reckoning
DV	Direct Vision (Windscreens)

EAS	Equivalent Air Speed
EGPWS	Enhanced Ground Proximity Warning System
EGT	Exhaust Gas Temperature
ENG	Engine
EPNdB	Effective Perceived Noise decibel
ESIS	Electronic Standby Instrument System
FD	Flight Director
F/DK	Flight Deck
FMS	Flight Management System
ft	Foot or Feet
GEN	Generator
GPS	Global Positioning System
GS	Glideslope
HDG	Heading
HF	High Frequency
HP	High Pressure
HPa	Hectopascals
Hz	Frequency Cycles Per Second
IAS	Indicated Air Speed
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMN	Indicated Mach Number
INV	Inverter
IOAT	Indicated Outside Air Temperature
in. Hg	Inches of Mercury
ISA	International Standard Atmosphere
ITT	Interstage Turbine Temperature
kg	Kilogram(s)
KIAS	Knots Indicated Airspeed
kPa	Kilo Pascals
kph	Kilometers Per Hour
kt	Knot(s)
lb	Pound(s)
lb/in^2	Pounds Per Square Inch
LDA	Localizer - Directional Aid
LOC	Localizer
LOC-BC	Localizer - Back Course
LP	Low Pressure
L & R	Left and Right
LTS	Lights
MAV	Main Air Valve
m	Meter(s)
mb	Millibars
MCT	Maximum Continuous Thrust
MDA	Minimum Descent Altitude
MDH	Minimum Descent Height
MFD	Multifunction Display
MIC	Microphone
MMEL	Master Minimum Equipment List
MNPS	Minimum Navigation Performance Specification
MPH or mph	Miles Per Hour

M_{RA}	Rough Air Mach Number
MSG	Message
MWS	Master Warning System
NAV	Navigation
N_1	Engine LP Shaft Speed (%)
$N_{1\ REF}$	Engine LP Shaft Reference Speeds (%)
N_2	Engine HP Shaft Speed (%)
OAT	Outside Air Temperature
OCA	Obstacle Clearance Altitude
OCH	Obstacle Clearance Height
OVRD	Override
PA	Passenger Address
PBA	Push Button Annunciator
PBE	Protective Breathing Equipment
PE	Power Emergency
PEC	Position Error Correction
PFD	Primary Flight Display
PIT	Pitch
PIT-ROLL	Pitch - Roll
PRESSN	Pressurization
PS	Power (Main bus bar)
PSI	Pounds Per Square Inch
QFE	Barometric Pressure in Millibars at Airfield Height
QNH	Barometric Pressure in Millibars at Sea Level
RA	Radio Altimeter or Resolution Advisory
RAIM	Receiver Autonomous Integrity Monitoring
REV	Reversionary
RNAV	Area Navigation
RPM or rpm	Revolutions Per Minute
RVR	Runway Visual Range
RVSM	Reduced Vertical Separation Minimum
SDF	Simplified Directional Facility
SFD	Secondary Flight Display
SL	Sea Level
SMC	Standard Mean Chord
SSU	Signal Summing Unit
SYNC	Synchronization (Engine)
TA	Terrain Awareness or Traffic Advisory
TAD	Terrain Awareness Display
TAS	True Airspeed
TAT	Total Air Temperature
TCAS	Traffic Alert and Collision Avoidance System
TCF	Terrain Clearance Floor
TERR	Terrain
TFR	Transfer
T_{IND}	Temperature Indicated Air
TKS	Trade name of de-icing fluid
TO	Takeoff or Take-off
TODA	Take-off Distance Available
TORA	Take-off Run Available
T/R	Thrust Reverse
US Gal(s)	US Gallon(s)

V or v	Volt(s)
VFR	Visual Flight Rules
VHF	Very High Frequency
VLV	Valve
VNAV	Vertical Navigation
VOR	VHF Omnidirectional Radio Range
VSI	Vertical Speed Indication
V_{SPEEDS}	For additional V_{SPEED} definitions, refer to Sub-section 5.10
V_A	Design Maneuvering Speed
V_{APP}	Approach Speed
V_{FE}/V_{FO}	Maximum Flap-Extended/Flap-Operation Speed
V_{LE}	Maximum Landing Gear Extended Speed
V_{LO}	Maximum Landing Gear Operating Speed
V_{MC}	Minimum Control Speed
V_{MO}/M_{MO}	Maximum Operating Limit Speed/Mach Operating Speed
V_{RA}	Rough Air Speed
WAT	Weight, Altitude, Air Temperature
WS	Windshear
XDATA	Cross-side data
XE	Power Emergency - AC
X-FEED	Crossfeed
XFMR	Transformer
XFR	Transfer
XPDR	Transponder
XS	Power System - AC
YD	Yaw Damper

DEFINITIONS

NOTE: Definitions of terms used primarily in performance calculations are given in Section 5, Sub-section 5.05.

IAS

The indicated airspeed is the reading obtained on a pitot static airspeed indicator having no instrument calibration error. If the calibration error of the particular instrument is not known, the actual reading (i.e. ASIR) may be taken to be equal to IAS because the tolerances permitted on the instrument are small.

CAS

The calibrated airspeed is the IAS value corrected for pitot-static position error and instrument error.

EAS

The equivalent airspeed is the IAS value corrected for pitot-static position error, and compressibility effect.

TAS

The true airspeed of the airplane relative to the undisturbed air. It can be obtained by dividing the EAS value by the square root of the relative air density for the altitude.

Indicated Mach Number (IMN)

The reading obtained on a Machmeter having no calibration error. If the calibration error of the particular instrument is not known, the actual reading may be taken to be equal to the Indicated Mach number because the tolerances permitted on the instrument are small.

Pressure Altitude

An atmospheric pressure expressed as the altitude which corresponds to that pressure in the International Standard Atmosphere.

Pressure altitude may be obtained by setting the sub-scale of a pressure type altimeter to 1013.2 millibars or HPa (29.92 inches or 760 millimeters of Mercury).

Indicated Outside Air Temperature (IOAT)

The reading on an outside air thermometer installed on the airplane.

Air Temperature

The true temperature of the free air near to, but uninfluenced by, the airplane and obtained either from ground meteorological sources or from in-flight temperature indication, corrected for instrument calibration error and compression heat rise.

Weight

The total loaded weight of the airplane including fuel, oil, equipment, crew and payload.

International Standard Atmosphere (ISA)

For the relationship between air temperature and pressure altitude in the International Standard Atmosphere, refer to Sub-section 5.05, Figure 5.05.16 ISA TEMPERATURES.

Standard Mean Chord (SMC)

The standard mean chord is defined by the relationship $\frac{\text{Wing area}}{\text{Span}}$ where the wing area includes the area enclosed by the leading and trailing edges of the wing projected to the center line of the airplane.

Volumetric Units

Where a volumetric quantity is used, it is stated to be US gallons or liters. Fuel quantities are given by weight in units of pounds and kilograms.

Obstacle Clearance Altitude/Height (OCA/H)

The lowest altitude (OCA), or alternatively the lowest height above the elevation of the relevant runway threshold or above the airfield elevation as applicable (OCH), used in establishing compliance with appropriate obstacle clearance criteria.

LEADING PARTICULARS

A three-view, general arrangement drawing is shown in Figure 1.1.

Dimensions

The leading dimensions are shown in Figure 1.1.

Area

Wing Area	374 ft^2 (34.7 m^2)
Horizontal Stabilizer Area	100 ft^2 (9.3 m^2)
Vertical Stabilizer Area	62.5 ft^2 (5.8 m^2)

Flap Settings

0°

15°

25°

45°

GENERAL DIMENSIONS

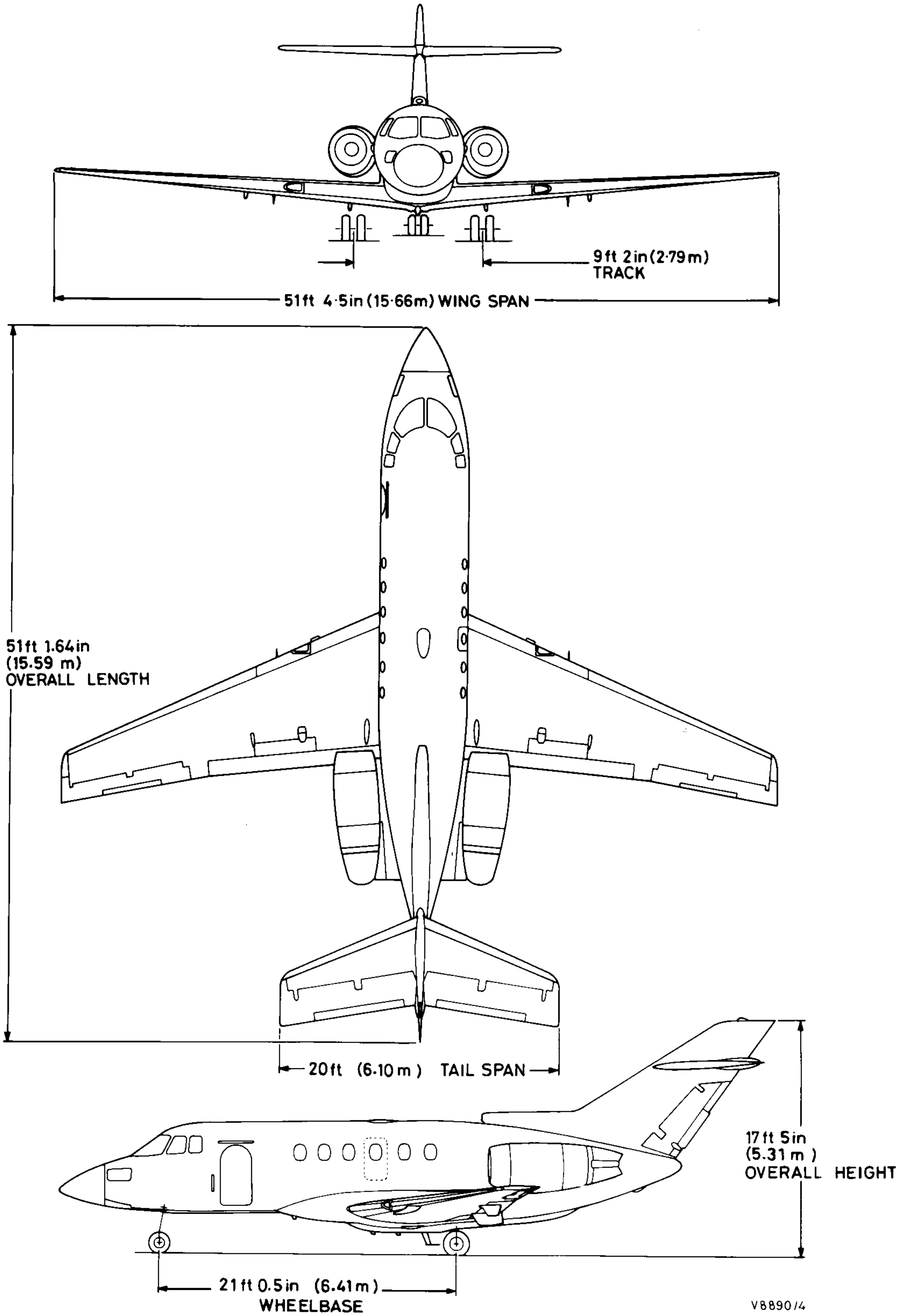

Figure 1.1

SECTION 2

LIMITATIONS

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KINDS OF OPERATION

This airplane is eligible for certification in the Transport Category and is approved for the following kinds of operation when the appropriate instruments and equipment required by the airworthiness and/or operating certificate are installed and approved and are in operable condition.

- Atmospheric icing conditions
- Day and night VFR
- IFR
- RVSM

However, the certificate of airworthiness may restrict this airplane to some other category and to a particular use.

WEIGHT LIMITATIONS

Maximum Taxiing (Ramp) Weight	28,120 lb (12,755 kg)
Maximum Take-off Weight	28,000 lb (12,701 kg)
Maximum Landing Weight	23,350 lb (10,591 kg)
Maximum Zero Fuel Weight	18,450 lb (8369 kg)
Minimum Zero Fuel Weight	14,120 lb (6405 kg)

PERFORMANCE LIMITATIONS

Take-off Weight

Maximum Take-off Weight is limited by the most restrictive of the following:

- 28,000 lb (12,701 kg).
- As shown on the MAXIMUM TAKE-OFF WEIGHT FOR ALTITUDE AND TEMPERATURE graphs (see Sub-section 5.15).
- The maximum permitted by field length considerations (see Sub-section 5.20).
- The maximum permitted by maximum brake energy considerations (see Sub-section 5.20).
- The maximum permitted by obstacle clearance considerations (see Sub-section 5.25).

Landing Weight

Maximum Landing Weight is limited by the most restrictive of the following:

- 23,350 lb (10,591 kg).
- As shown on the MAXIMUM LANDING WEIGHT FOR ALTITUDE AND TEMPERATURE graph (see Sub-section 5.45).
- The maximum permitted by field length considerations (see Sub-section 5.50).

Take-off Field Length

The take-off weight shall not exceed the maximum permitted by field length considerations as described in Sub-section 5.20 for the restricted range of conditions listed.

When complying with the above, the following conditions shall be met:

- The take-off distance used in the graphs shall not be greater than the length of runway plus the length of clearway if present, except that the length of clearway shall not be greater than one-half of the length of the runway.
- The take-off run used in the graphs shall not be greater than the length of the runway.

OPERATIONAL LIMITATIONS

Altitude

Maximum/Minimum field pressure altitudes
for takeoff or landing...13,000 ft and -2000 ft

NOTE: Performance appropriate to the lowest published elevation shall be used when the field pressure altitude is below the lowest published elevation.

Maximum Permissible Altitude

Maximum permissible operating altitude is 41,000 ft.

Maximum permissible altitude with flaps lowered or landing gear extended is 20,000 ft.

Air Temperature

Maximum

All Flight Regimes .... ISA +35° C

Ground (prior to engine start):

Flight compartment exposed to direct sunlight (sky with less than 10% cloud cover)

- With flight compartment sunshields.......... ISA +35° C
- Without flight compartment sunshields..... ISA +31° C

Flight compartment exposed to indirect sunlight (sky with more than 10% cloud cover)

- ISA +35° C

NOTE: If sunshields are utilized, a sufficient quantity shall be installed to protect the entire flight compartment.

Minimum

- Takeoff/Landing....................................... -40° C
- Enroute.. -75° C

NOTE: When the temperature is below the lowest scheduled, performance appropriate to the lowest scheduled temperature shall be used.

Wind Component

The maximum tailwind component for takeoff and landing appropriate to a height of 33 ft (10.1 m) is 10 knots.

Runway Slope

The maximum effective runway slopes for takeoff are 2% uphill and 2% downhill.

Airplane Configurations

The airplane configurations as stated in Sub-section 5.05 must be observed.

COMPARTMENT LOADING LIMITATIONS

The airplane must be loaded in accordance with Section 6 - WEIGHT & BALANCE of this Airplane Flight Manual and as provided on placards in the Baggage/Stowage Compartments.

LOAD LIMITATIONS

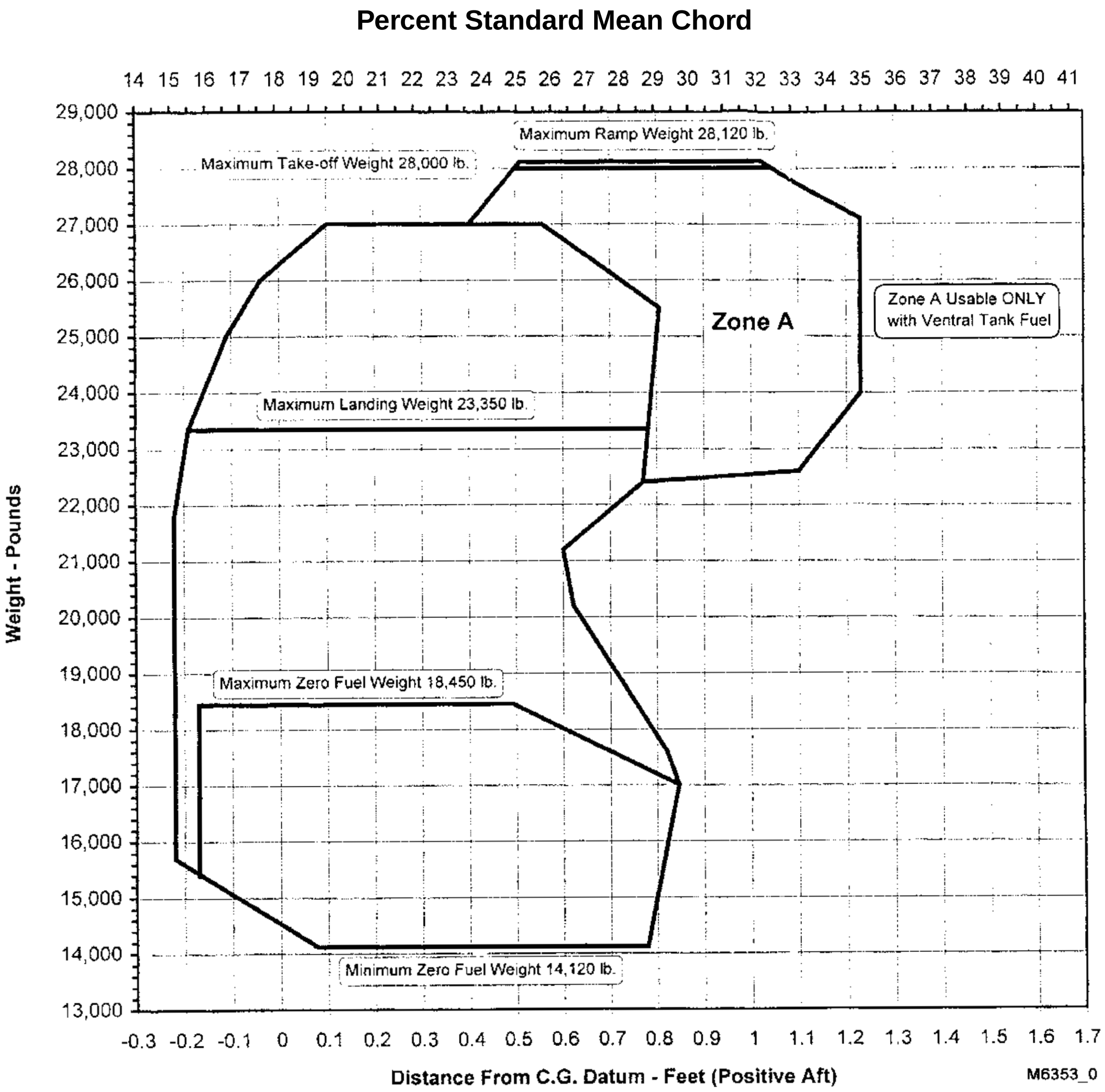
Center Of Gravity Limitations

The center of gravity must always lie between the forward and aft limits as defined in the envelope shown in Figures 2.1 and 2.2.

The limits apply with the landing gear up. The effect of the landing gear in the down position is negligible.

The center of gravity datum is 11 ft (3.4 m) forward of the reference point on the fuselage. The reference point is defined by a screw on the fuselage skin located beneath the right engine pod.

LOADING and FLIGHT ENVELOPE - POUNDS/FEET



(Landing Gear Retraction Moment Change is Negligible)

Figure 2.1

TEMPORARY CHANGE

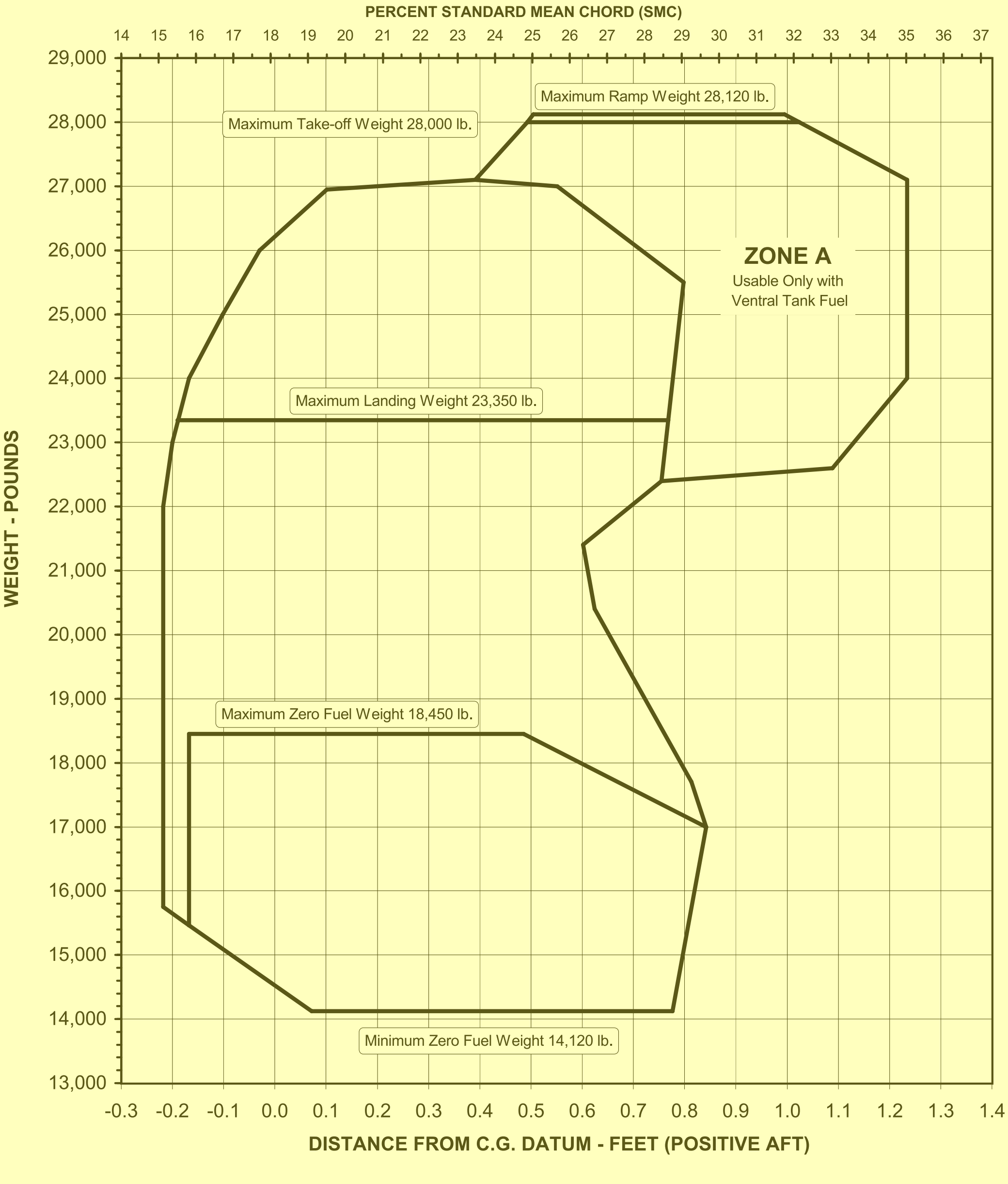
P/N 140-590032-0005TC26

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005.
AIRPLANE EFFECTIVITY:	All Hawker 800XP Pro Line 21 airplanes.
DESCRIPTION OF CHANGE:	Revised the Loading and Flight Envelopes to correspond with the definition listed in the Type Certificate Data Sheet.
FILING INSTRUCTIONS:	Insert this Temporary Change Page 1 of 6 into the Hawker 800XP Pro Line 21 FAA Approved Airplane Flight Manual Section 2 - LIMITATIONS to face Page 6. Insert Page 4 of 6 into Section 6 - WEIGHT & BALANCE to face Page 9. Insert Page 5 of 6 into Section 6 - WEIGHT & BALANCE to face Page 10.

SECTION 2 - LIMITATIONS

LOAD LIMITATIONS

LOADING and FLIGHT ENVELOPE - POUNDS/FEET



(Landing Gear Retraction Moment Change is Negligible)

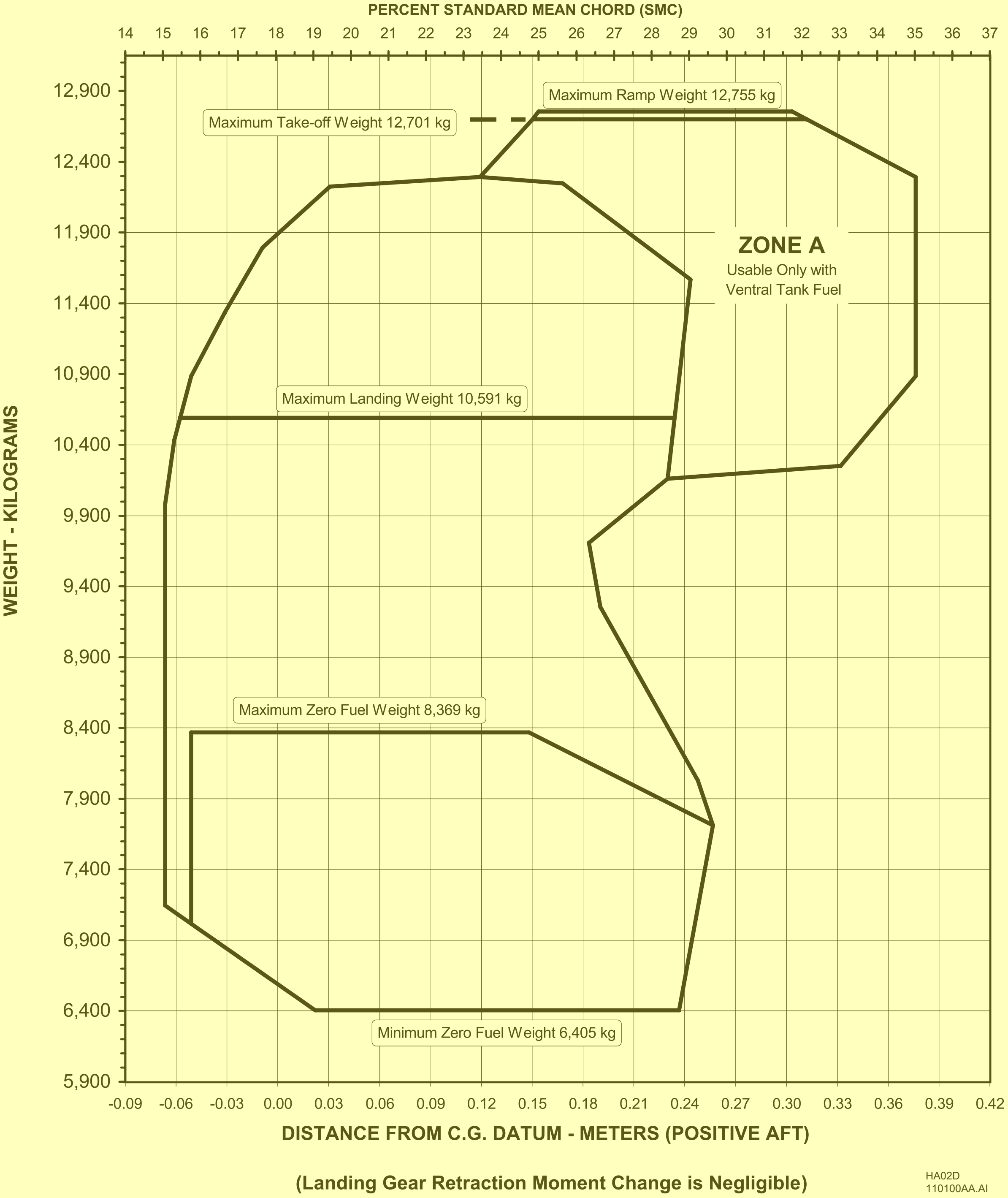
TEMPORARY CHANGE

P/N 140-590032-0005TC26

SECTION 2 - LIMITATIONS

LOAD LIMITATIONS

LOADING and FLIGHT ENVELOPE - KILOGRAMS/METERS



(Landing Gear Retraction Moment Change is Negligible)

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LOADING and FLIGHT ENVELOPE - KILOGRAMS/METERS

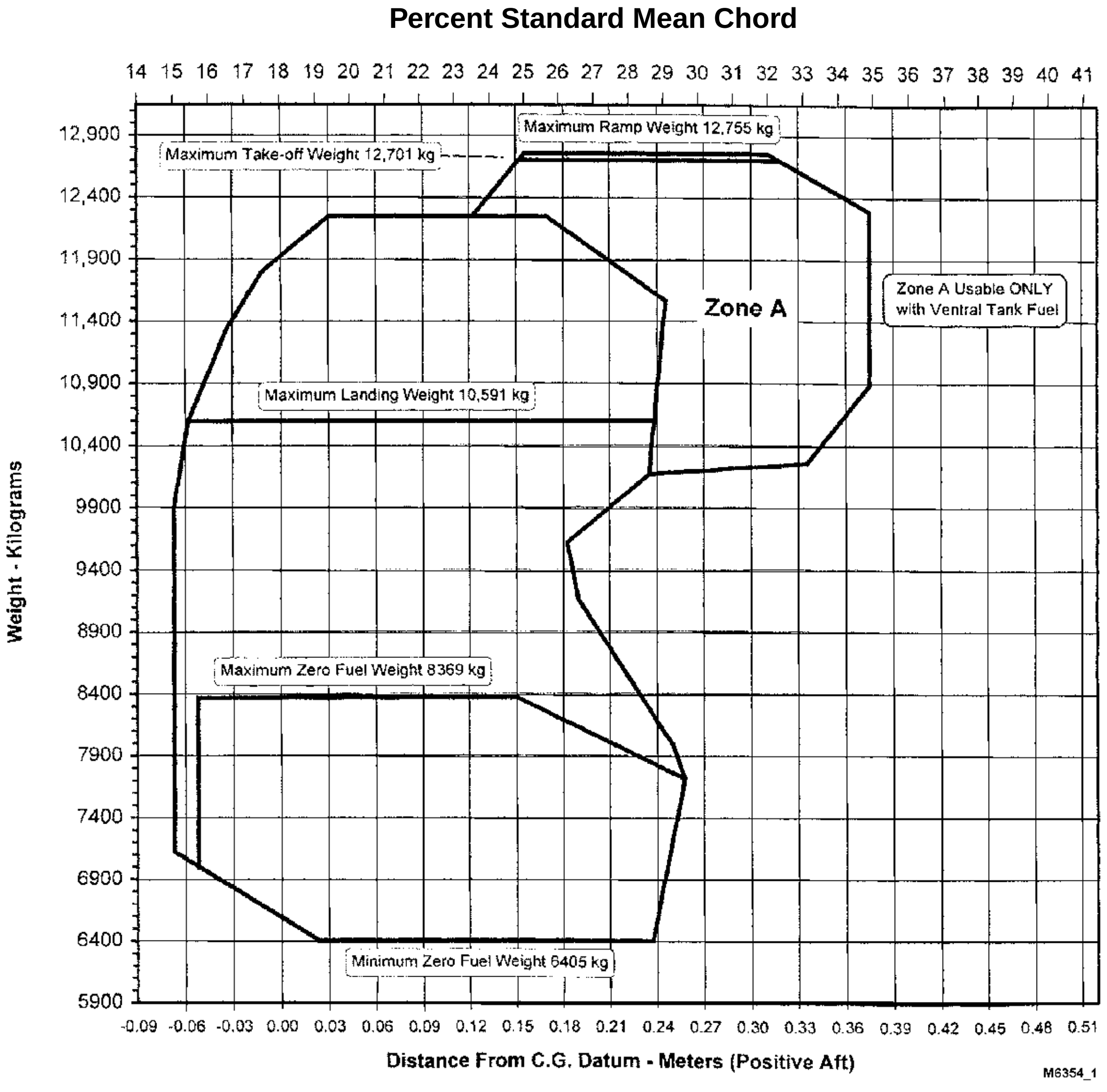

Figure 2.2 **(Landing Gear Retraction Moment Change is Negligible)**

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TEMPORARY CHANGE

P/N 140-590032-0005TC16 (Issue 3)

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005, Dated Nov 30, 2001, or latest revision for Hawker 800XP airplanes equipped with Pro Line 21 avionics.
AIRPLANE SERIAL NUMBERS AFFECTED:	Hawker 800XP 258541, 258556, 258567 and After.
DESCRIPTION OF CHANGE:	Revised Ice Protection Limitations.
FILING INSTRUCTIONS:	Remove and destroy existing Temporary Change 16 (Issue 2) Pages 1 of 3 and 2 of 3 from Section 2 - LIMITATIONS Page 9. Insert Temporary Change 16 (Issue 3) Page 2 of 4 to face Page 9 in Section 2 - LIMITATIONS.

SECTION 2 - LIMITATIONS

ICE PROTECTION LIMITATIONS

Refer to Page 2 of 4.

Approved By:..

for Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date:.......8/19/08.........................

ICE PROTECTION LIMITATIONS

Read the following information in place of the existing information under Icing General on Page 9:

Icing General

Icing conditions exist on the ground, during takeoff and in flight, when Static Air Temperature (SAT) is 10° C or below and visible moisture in any form is present (e.g. clouds, fog with visibility of 1 mile (1600 meters) or less, rain, snow, sleet and ice crystals).

Icing conditions also exist when the OAT, on the ground and for takeoff, is 10° C or below when operating on ramps, taxiways, or runways where surface snow, ice, standing water or slush may be ingested by the engines or freeze on the engines, nacelles or engine sensor probes.

Read the following information in place of the existing information under Airframe Icing on Page 9:

Airframe Icing

Takeoff is prohibited with frost, ice, snow or slush adhering to the wings, control surfaces, engine inlets or other critical surfaces, with the exception of the following areas:

- Frost is allowable on the underside of the wings over the general area of the fuel tanks provided that the depth does not exceed 1/8 inch (3 mm).

  If frost is present in this region, the WAT limited take-off weight must be reduced by 1000 lb (454 kg) and the net flight path reference and fourth segment climb gradients must be obtained using a weight 1000 lb (454 kg) higher than the actual weight.

- Frost is allowable on the fuselage provided the layer is thin enough to distinguish the surface features such as paint lines or markings underneath, but all vents, probes and ports must be clear of frost.

A visual and tactile (hand on surface) check of the wing leading edges and the wing upper surface must be performed to ensure the wing is free from frost, ice, snow or slush when the outside air temperature is less than 50° F (10° C) or if it cannot be ascertained that the wing fuel temperature is above 32° F (0° C) and;

- There is visible moisture (rain, drizzle, sleet, snow, fog, etc.) present;
  or

- Water is present on the wing;
  or

- The difference between the dew point and the outside air temperature is 5° F (3° C) or less;
  or

- The atmospheric conditions have been conducive to frost formation.

ICE PROTECTION LIMITATIONS

Icing General

Icing conditions exist when Outside Air Temperature (OAT) on the ground and during takeoff, or Total Air Temperature (TAT) in flight is 10° C or below, and visible moisture in any form is present (e.g. clouds, fog with visibility of 1 mile (1600 meters) or less, rain, snow, sleet and ice crystals).

Icing conditions also exist when the OAT on the ground and for takeoff is 10° C or below when operating on ramps, taxiways, or runways where surface snow, ice, standing water or slush may be ingested by the engines or freeze on the engines, nacelles or engine sensor probes.

Airframe Icing

The airplane must be clear of snow, ice and frost before takeoff with the exception of the following areas:

- Frost is allowable on the underside of the wings over the general area of the fuel tanks provided that the depth does not exceed 0.125 inch (3.175 mm).

  If frost is present in this region, the WAT limited take-off weight must be reduced by 1000 lb (454 kg) and the net flight path reference and fourth segment climb gradients must be obtained using a weight 1000 lb (454 kg) higher than the actual weight.

- Frost is allowable on the fuselage provided the layer is thin enough to distinguish the surface features such as paint lines or markings underneath, but all vents, probes and ports must be clear of frost.

Wing/Tail Antice System

Only de-ice fluids TKS80, R328 or fluid to specification DTD 406B must be used.

NOTE: A tank indicating FULL provides priming and protection for a period of at least 85 minutes.

Engine Icing

Refer to ENGINE LIMITATIONS - this section.

SEVERE ICING CONDITIONS LIMITATIONS

WARNING: SEVERE ICING MAY RESULT FROM ENVIRONMENTAL CONDITIONS OUTSIDE OF THOSE FOR WHICH THE AIRPLANE IS CERTIFICATED.

FLIGHT IN FREEZING RAIN, FREEZING DRIZZLE, OR MIXED ICING CONDITIONS (SUPERCOOLED LIQUID WATER AND ICE CRYSTALS) MAY RESULT IN ICE BUILD-UP ON PROTECTED SURFACES EXCEEDING THE CAPABILITY OF THE ICE PROTECTION SYSTEM, OR MAY RESULT IN ICE FORMING AFT OF THE PROTECTED SURFACES.

THIS ICE MAY NOT BE SHED USING THE ICE PROTECTION SYSTEMS, AND MAY SERIOUSLY DEGRADE THE PERFORMANCE AND CONTROLLABILITY OF THE AIRPLANE.

During flight, severe icing conditions that exceed those for which the airplane is certificated shall be determined by the following visual cues.

If one or more of these visual cues exists, immediately request priority handling from Air Traffic Control to facilitate a route or an altitude change to exit the icing conditions:

- Extensive ice accumulation on the airframe in areas not normally observed to collect ice.
- Accumulation of ice on the wing aft of the protected area.

Since the autopilot may mask tactile cues that indicate adverse changes in handling characteristics, use of the autopilot is prohibited when any of the visual cues specified above exist, or when unusual lateral trim requirements or autopilot trim warnings are encountered while the airplane is in icing conditions.

ENGINE LIMITATIONS

Engine Type

Two Allied Signal TFE731-5BR-1H turbofan engines.

Engine Limitations

CONDITION	% RPM		MAX ITT °C	TIME LIMIT
	N_1	N_2		
Start or Relight *	----	----	978 996 over 996	Unrestricted 10 Seconds 5 Seconds
Takeoff *	100	100.8	978 1006 1016	5 Minutes 5 Seconds 2 Seconds
Maximum Take-off Thrust * (APR Operating) (see NOTE 1)	100	100.8	996 1006 1016	5 Minutes 5 Seconds 2 Seconds
Initial Maximum Take-off Thrust (APR Not Operating)	100	100.8	978 1006 1016	5 Minutes 5 Seconds 2 Seconds
Maximum Continuous *	100	100.8	968	Unrestricted (see NOTE 2)
Maximum Overspeed *	103	103	----	5 Seconds

*** These conditions appear on placards.**

Oil Temp	Maximum	127° C up to 30,000 ft
	Maximum	140° C above 30,000 ft
	Transient Maximum	149° C (2 minutes)
	Minimum (Starting)	-40° C
	Minimum (Takeoff)	30° C
Oil Press	Takeoff and Maximum Continuous and Climb	38 lb/in^2 (262 kPa) to 46 lb/in^2 (317.2 kPa)
	Idle	25 lb/in^2 (172.4 kPa) minimum
	Transient Maximum	55 lb/in^2 (379.2 kPa) (3 minutes)

NOTES:

1. *Initial maximum take-off thrust is selected by the pilot on takeoff. When the Automatic Performance Reserve (APR) System is operative, maximum take-off (APR) thrust will be obtained automatically on one engine if the other engine fails during takeoff.*

   The five minute limit of maximum APR thrust must include the duration of operation at initial maximum take-off thrust prior to the operation of APR. Any normal take-off limitations exceeded during APR operation must be recorded in the technical log.

2. *This is not a normal cruise setting.*

Approved Engine Oils

Airplanes which have not accomplished Honeywell Service Bulletin 72-3597 or 72-3662	***Airplanes which have accomplished Honeywell Service Bulletin 72-3597 or 72-3662***
Aeroshell/Royco Turbine Oil 500	Mobil 254
Aeroshell/Royco Turbine Oil 560	Exxon 2197
BP Turbo Oil 2197	BP Turbo Oil 2197
BP Turbo Oil 2380	
Castrol 5000	
Exxon/Esso 2380 Turbo Oil	
Exxon 2197	
Mobil Jet Oil II	
Mobil 254	
NOTE: Engine oils in this column can be mixed.	*NOTE: Engine oils in this column can be mixed. Do not mix these oils with any other oils.*

Engine Oil Consumption

The maximum permissible oil consumption rate of an engine during any flight is 0.01 U.S. gallons (0.036 liters) per hour.

Engine Fuel Computer

Flight must not be initiated with an engine fuel computer inoperative.

Engine Synchronizer

The ENG SYNC switch must be selected OFF for takeoff.

Automatic Performance Reserve (APR)

The Automatic Performance Reserve (APR) system must be armed for takeoff, except for crew training only, when it need not be armed.

Engine Instrument Markings

Red Indications	A maximum or minimum limit has been exceeded.
Yellow Indications	Cautionary operations permissible for short duration or in special circumstances - refer to individual limitations.
Green or White Indications	Normal operations.

TEMPORARY CHANGE

P/N 140-590032-0005TC29

PUBLICATION AFFECTED: FAA Approved Airplane Flight Manual, P/N 140-590032-0005.

AIRPLANE EFFECTIVITY: All Hawker 800XP Pro Line 21 airplanes.

DESCRIPTION OF CHANGE: Revised fuel specifications and minimum fuel temperatures.

FILING INSTRUCTIONS: Insert Temporary Change 29, Page 2 of 4, into Section 2 - LIMITATIONS, to face Page 13. Insert Page 4 of 4 into Section 2 to face Page 15.

Section 2 - LIMITATIONS

FUEL LIMITATIONS

Fuel Specifications

Refer to Page 2 of 4.

Approved by: Larry Monashrina for
Randolph Shields, ODA Lead administrator
Beechcraft Corporation
ODA-230339-CE

Approval Date: 9/5/2013

Section 2 - LIMITATIONS

FUEL LIMITATIONS

Fuel Specifications

Read the following information in place of the existing fuel specifications:

Aviation kerosene to the current approved issue of the following specifications:

British	DEF STAN 91-87 (D.E.R.D. 2453) DEF STAN 91-91 (D.E.R.D. 2494)
American	ASTM D1655/JET A ASTM D1655/JET A-1 MIL-T-83133/JP-8
Canadian	CAN/CGSB 3.23/JET A CAN/CGSB 3.23/JET A-1
Russian	GOST 10227-86 TS-1 GOST 10227-86 T-1 GOST 10227-86 RT
Chinese	GB 6537-2006/No. 3 JET FUEL

Thrust Reversers

- Deployment of either thrust reverser is restricted to ground operations only.
- The thrust reverse levers must not be selected until the airplane is on the ground.
- Engine starts with thrust reversers deployed are prohibited.
- Reverse thrust must not be used to taxi backwards.
- Thrust in excess of reverse idle must not be selected below speeds of 50 KIAS, except in an emergency.
- When operating on unpaved surfaces, reverse idle thrust must not be exceeded except in an emergency.
- If the thrust reverser system is known to be inoperative or unserviceable, it must be disabled and locked in the forward thrust position.

Engine Ice Protection System

The ENG ANTICE switches may be selected ON at any engine speed. If engine anti-icing is required during takeoff, it is recommended that they should be turned ON prior to setting takeoff power.

Engine inlet anti-icing should be used in flight continuously during expected icing conditions.

When icing conditions do not exist, the inlet anti-icing should not be used above 50° F (10° C) ambient conditions for more than 10 seconds.

FUEL LIMITATIONS

The following fuels and additives are approved for use with this engine installation.

Fuel Specifications

Aviation kerosene to the current approved issue of the following specifications:

British	DEF STAN 91-87 (D.E.R.D. 2453) DEF STAN 91-91 (D.E.R.D. 2494)
American	ASTM D1655/JET A ASTM D1655/JET A-1 MIL-T-83133/JP8
Canadian	CAN/CGSB 3.23/JET A CAN/CGSB 3.23/JET A-1
Russian	GOST 10227-86 TS-1 GOST 10227-86 T-1 GOST 10227-86 RT
Chinese	GB 6537-94/No. 3 JET FUEL

Aviation wide-cut fuel to the current approved issue of the following specifications:

British	DEF STAN 91-88 (D.E.R.D. 2454)
American	ASTM D1655/JET B MIL-T-5624/JP4 MIL-T-5624/JP5
Canadian	CAN/CGSB 3.22/JET B
Russian	GOST 10227-86 T-2

Fuel Additives

Anti-static

STADIS 450 additive may be used in concentrations not exceeding 3 parts per million (ppm) by volume.

SIGBOL additive TU38-101741-78 may be used in concentrations not exceeding 0.0005% by volume.

Anti-icing and biocidal additives

For anti-icing and preventative continuous Biocidal treatment DEF STAN 68-252, MIL-I-27686 or MIL-I-85470 may be used in concentrations not exceeding 0.15% by volume.

NOTE: The above additives should not be added to fuel to specification DEF STAN 91-87, MIL-T-5624 and MIL-T-83133 as they are already present in these fuels.

TGF to GOST 17477-86; TGF(M) to TU 6-10-1457-79; I to GOST 8313-88; I(M) to TU 6-10-1458-79 may be used in concentrations not exceeding 0.3% by volume.

Biobor JF may be used at concentrations not exceeding 135 parts per million by weight, as preventative biocidal treatment.

For biocidal shock treatment, Biobor JF may be used at concentrations not exceeding 270 ppm by weight, provided it is subsequently off-loaded prior to engine start (135 ppm is the maximum concentration for engine operation).

Anti-corrosive Additive

Fuels may contain additives complying with DEF STAN 68-251 or MIL-I-25017 at concentrations permitted by the fuel specification.

NOTE: Fuel to specification DEF STAN 91-87 already includes HITEC E515.

TEMPORARY CHANGE

P/N 140-590032-0005TC29

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005.
AIRPLANE EFFECTIVITY:	All Hawker 800XP Pro Line 21 airplanes.
DESCRIPTION OF CHANGE:	Revised fuel specifications and minimum fuel temperatures.
FILING INSTRUCTIONS:	Insert Temporary Change 29, Page 2 of 4, into Section 2 - LIMITATIONS, to face Page 13. Insert Page 4 of 4 into Section 2 to face Page 15.

Section 2 - LIMITATIONS

FUEL LIMITATIONS

Minimum Fuel Temperatures

Refer to Page 4 of 4.

TEMPORARY CHANGE

P/N 140-590032-0005TC29

Section 2 - LIMITATIONS

FUEL LIMITATIONS

Minimum Fuel Temperatures

Read the following information in place of the existing minimum fuel temperatures:

To avoid the possibility of fuel freezing or exceeding engine limitations, the following ambient air and indicated fuel temperature limitations should be observed:

FUEL	MINIMUM FUEL OR AMBIENT AIR TEMP AT TAKEOFF	MINIMUM FUEL TEMP IN FLIGHT	FUEL FREEZING TEMP
DEF STAN 91-91 (D.E.R.D. 2494) DEF STAN 91-87 (D.E.R.D. 2453) ASTM D1655/JET A-1 CAN/CGSB 3.23/JET A-1 MIL-T-83133/JP-8 Chinese No. 3 Jet Fuel (GB 6537-2006)	-42° C	-45° C	-47° C
ASTM D1655/JET A CAN/CGSB 3.23/JET A	-35° C	-38° C	-40° C
DEF STAN 91-88 (D.E.R.D. 2454) MIL-T-5624/JP-4	-53° C	-54° C	-58° C
MIL-T-5624/JP-5	-41° C	-44° C	-46° C
ASTM D1655/JET B CAN/CGSB 3.22/JET B	-45° C	-48° C	-50° C
GOST 10277-86 TS-1[1] GOST 10277-86 T-1[1] GOST 10277-86 T-2[1] GOST 10277-86 RT[1]	-42° C	-45° C	-47° C

NOTE:

1. *TS-1, T-1 and T-2 fuels with freeze points down to -57° C and RT fuel with a freeze point down to -52° C may be available in extreme cold weather (Zone 11 per GOST 16350-80). Flight crews may use these lower freeze temperatures only if the fuel blend has been verified prior to takeoff. After verification, the corresponding minimum fuel temperatures for TS-1, T-1 and T-2 are -52° C at takeoff and -54° C in flight. After verification, the corresponding minimum fuel temperature for RT is -47° C at takeoff and -50° C in flight.*

Maximum Fuel Temperature

The maximum permissible fuel temperature is 57° C.

Minimum Fuel Temperature

To avoid the possibility of fuel freezing or exceeding engine limitations, the following ambient air and indicated fuel temperature limitations should be observed:

FUEL	MINIMUM FUEL OR AMBIENT AIR TEMP AT TAKEOFF	MINIMUM FUEL TEMP IN FLIGHT	FUEL FREEZING TEMP
DEF STAN 91-91 (D.E.R.D 2494) DEF STAN 91-87 (D.E.R.D 2453) ASTM D1655/JET A-1 MIL-T-83133/JP8 CAN/CGSB 3.23/JET A-1	-42° C	-45° C	-47° C
ASTM D1655/JET A CAN/CGSB 3.23/JET A GB 6537-94/No. 3 JET FUEL	-35° C	-38° C	-40° C
DEF-STAN 91-88 (D.E.R.D 2454) MIL-T-5624/JP4 MIL-T-5624/JP5	-53° C -35° C	-54° C -38° C	-58° C -40° C
ASTM D1655/JET B CAN/CGSB 3.22/JET B	-45° C	-48° C	-50° C
GOST 10277-86 TS-1 GOST 10277-86 T-1 GOST 10277-86 T-2	-54° C	-54° C	-60° C
GOST 10277-86 RT	-50° C	-53° C	-55° C

Fuel Quantity

The usable fuel capacity of each tank when gravity filled is as follows:

LOCATION	U.S. GALLONS	EQUIVALENT LITERS
Wing tank (either side)	634	2400
Ventral tank	233	882

Credit shall not be taken for any fuel remaining in the tanks when the fuel quantity indicators read zero in level flight.

After pressure refueling, the contents of each wing tank will be 2.4 US Gallons (9.1 Liters) less and the contents of the ventral tank will be 3.6 US Gallons (13.6 Liters) less.

The contents of the ventral tank are reduced by 4.8 US Gallons (18.2 Liters) for airplanes which have an external toilet servicing facility.

Fuel Loading

Fuel tanks may be replenished in any sequence provided that the appropriate refueling instructions are observed and that the following preflight fuel loading conditions are achieved:

1. Fuel contained in the wing tanks shall be equally disposed between the two wing tanks.

2. Fuel must not be carried in the ventral tank unless each main wing tank contains at least 3450 lb (1565 kg) of fuel.

3. Before flights on which it is to be utilized, the ventral tank must be filled completely. For other flights it must be empty.

Pressure Refueling

Takeoff must not be initiated if the amber FUEL annunciator on the MWS panel and the amber REFUEL ON annunciator on the roof panel are illuminated.

Flight with the Refuel Power Switch ON is prohibited.

Fuel System Management

1. During flight, including takeoff and landing, the difference in fuel quantity between the two wing tanks must not exceed 500 lb (227 kg).

2. Fuel carried in the ventral fuel tank shall be transferred into the wing tanks when the fuel level in the wing tanks has fallen to 3300 lb (1497 kg) per side.

3. Overweight landing procedure and inspection is required for any landing with fuel in the ventral tank.

ELECTRICAL LIMITATIONS

Battery Limitations

Maximum battery charge on the main airplane batteries (B1 and B2) immediately before takeoff shall not be greater than 20 AMPS.

Generator Limitations

Maximum continuous engine generator load: 300 AMPS

NOTE: Transient excursions, up to a maximum of 400 AMPS, are permitted for a maximum of 2 minutes.

Main Engine Starter Duty Cycle

On the ground, the maximum permitted starter operating time is 30 seconds. After an aborted start, a minimum of 1 minute cooling time must be allowed before making another attempt to start. A further 1 minute is required before making a third attempt. The cycle may be repeated after a further period of 30 minutes.

Operation of Electrical Circuit Breakers

If, during flight, a systems failure is accompanied by a circuit breaker operation, no attempt must be made to reset the circuit breaker unless specified in the appropriate Emergency or Abnormal procedure or, if deemed necessary for the continuation of safe flight, a circuit breaker may be reset once.

AVIONICS LIMITATIONS

General

1. The following documents must be carried onboard the airplane at all times:

   - Collins Pro Line 21 Avionics System for the Hawker 800XP Pilot's Guide P/N 523-0780409, 1st Edition dated May 31, 2001 or later revision.
   - Collins FMS-6000 Flight Management System for the Hawker 800XP Pilot's Guide, P/N 523-0780705, 1st Edition dated April 17, 2001 or later revision.
   - Mk V Enhanced Ground Proximity Warning System Pilot Guide, P/N 060-4241-0000, Rev D, dated March 2000 or later revision.

These publications contain the description and operation of the Collins Pro Line 21 avionics, the FMS-6000, TCAS II and EGPWS installations and must be available for use.

2. The pilot's and copilot's Air Data Computers must be operative for takeoff.

3. AHRS 1 and 2 must be operative for takeoff.

HF Radio

1. When the ADF is being used for approaches, the use of the HF radio is prohibited.

2. Fuel quantity indications are not to be used during HF radio transmissions.

Electronic Standby Instrument System (ESIS)

1. The red airspeed warning on the ESIS airspeed tape does not provide an associated aural warning.

2. During operations solely with references to the ESIS, the standby V_{MO}/M_{MO} indication must not be exceeded, as the ESIS altitude and airspeed indications are not corrected for static error.

Flight Management System

1. IFR enroute and terminal navigation is prohibited unless the pilot verifies either the currency of the database or the accuracy of each selected waypoint and navaid by reference to current approved data.

2. The FMS position must be checked for accuracy prior to use as a means of navigation and under the following conditions:

   - At or prior to arrival at each enroute waypoint during FMS navigation along approved RNAV routes.
   - Prior to requesting off-airway routing and at hourly intervals thereafter during FMS navigation off approved RNAV routes.
   - Prior to each compulsory reporting point during IFR operation when not under radar surveillance control.

3. During periods of dead reckoning, the FMS shall not be used for navigation.

4. All FMS navigation operations are approved within the U.S. National Airspace System and latitudes bounded by 60° North latitude and 60° South latitude at any longitude.

   - Operation to 70° North latitude is acceptable East of 75° West longitude and West of 120° West longitude.

   - Operation to 80° North latitude is acceptable East of 50° West longitude and West of 70° East longitude.

   - Operation to 70° South latitude is acceptable except for the 45° between 120° East and 165° East longitude.

   - The WGS-84 coordinate reference datum in accordance with the criteria of AC 20-130A, AC 91-49, and AC 120-33 must be used. Satellite navigation data is based upon use of only the Global Positioning System (GPS) operated by the United States.

5. FMS-based Instrument approaches must be accomplished in accordance with approved instrument approach procedures that are retrieved from the FMS-6000 data base.

   - Instrument approaches must be conducted in the approach mode and GPS integrity monitoring (RAIM) must be available at the Final Approach Fix.

   - Accomplishment of ILS, LOC, LOC-BC, LDA and SDF approaches are not authorized utilizing the FMS.

   - When an alternate airport is required by the applicable operating rules, it must be served by an approach based on other than GPS navigation, the airplane must have operational equipment capable of using that navigation aid, and the required navigation aid must be operational.

   - FMS based approaches that are retrieved from the navigation database with an approach name of RNVxxx may be flown provided the VHF navigation receiver is tuned to the reference facility.

6. Provided the FMS is receiving adequate usable sensor inputs, it has been demonstrated capable of and has been shown to meet the accuracy specifications of:

   - VFR/IFR enroute RNAV operation in accordance with the criteria of AC 20-130A.

   - GPS primary means of navigation in oceanic and remote airspace in accordance with AC 20-130A, when used in conjunction with the Collins Fault Detection and Exclusion software, dual Collins FMS-6000 Flight Management Systems and dual GPS-4000A receivers or a single FMS-6000 Flight Management System and/or Collins GPS-4000A receiver when operating on routes approved for single GPS navigation.

     This does not constitute an operational approval.

NOTE: With single Flight Management System operation, cross reference must be made to the Airplane Flight Manual for operating procedures and performance data.

TEMPORARY CHANGE

P/N 140-590032-0005TC12 (Issue 3)

PUBLICATION AFFECTED: FAA Approved Airplane Flight Manual, P/N 140-590032-0005, Dated Nov 30, 2001, or later revision for Hawker 800XP airplanes equipped with Pro Line 21 avionics.

AIRPLANE SERIAL NUMBERS AFFECTED: Hawker 800XP 258541, 258556, 258567 and After.

DESCRIPTION OF CHANGE: Revised the P-RNAV equipment list to include GPS-4000S and DBU-5000.

FILING INSTRUCTIONS: Remove and destroy existing Temporary Change 12 (Issue 2) Page 1 of 1 dated November 8, 2005, from Section 2 - LIMITATIONS Page 19.

Insert this Temporary Change 12 (Issue 3) Page 1 of 1 to face Page 19 in Section 2 - LIMITATIONS.

SECTION 2 - LIMITATIONS

AVIONICS LIMITATIONS

The following additional information applies to the Flight Management System on Page 19:

P-RNAV

Provided the FMS is receiving adequate usable sensor inputs, it has been demonstrated capable of and has been shown to meet the accuracy specifications of Operation in European P-RNAV airspace in accordance with JAA Temporary Guidance Material, Leaflet No. 10, provided the following equipment is operational:

Quantity	*Description*
2	CDU-6200 Control Display Unit
1	DBU-4100 or DBU-5000 Database Unit
2	VIR-432 / NAV-4000 / NAV-4500 Navigation Receiver (any 2 of the listed)
2	DME-442 / DME-4000 DME Transceiver (any 2 of the listed)
2	GPS-4000A or GPS-4000S Global Positioning System

This does not constitute an operational approval.

Approved By:..

for Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 5/1/08

TEMPORARY CHANGE

P/N 140-590032-0005TC15

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005, Dated Nov 30, 2001, or latest revision for Hawker 800XP airplanes equipped with Pro Line 21 avionics.
AIRPLANE SERIAL NUMBERS AFFECTED:	Hawker 800XP 258541, 258556, 258567 and After.
DESCRIPTION OF CHANGE:	Autopilot Flight Director Limitation.
FILING INSTRUCTIONS:	Insert this Temporary Change Page 1 of 1 to face Page 19 in Section 2 - LIMITATIONS,

SECTION 2 - LIMITATIONS

AVIONICS LIMITATIONS

Autopilot

Do not push a vertical mode Flight Director button (FLC, VNAV or VS) while the altitude preselector control is being rotated.

Approved By: ....

for Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 12/15/05

- Operation in European B-RNAV/RNP-5 airspace in accordance with AC 90-96 and AC 20-130A. This does not constitute an operational approval.
- Minimum Navigation Performance Specification (MNPS) airspace when equipped with dual Collins FMS-6000 Flight Management Systems and dual Collins GPS-4000A GPS receivers, or a single FMS-6000 Flight Management System and/or single GPS-4000A receiver on routes approved for single GPS navigation. This does not constitute an operational approval.
- VFR/IFR enroute, terminal and approach VNAV operation in accordance with AC 20-129.

7. Use of FMS to capture and track a DME arc outside the published end points is prohibited.
8. Fuel management parameters are advisory only and do not replace the primary fuel quantity indications.

Autopilot

1. A satisfactory preflight check of the system must be performed before the first flight of the day and after any power up or maintenance activity.
2. During autopilot operations, a pilot must be seated at the controls with seat belt and shoulder harness fastened.
3. The autopilot and yaw damper must not be used for takeoff and landing.
4. Do not manually override the autopilot during normal flight.

WARNING: OVERRIDING THE AUTOPILOT IN PITCH DOES NOT CANCEL THE AUTOPILOT AUTOMATIC TRIM. IF A FORCE IS APPLIED TO THE COLUMN WITH THE AUTOPILOT ENGAGED, THEN AUTOMATIC TRIM WILL RUN TO OPPOSE THE APPLIED FORCE. THIS CAN LEAD TO A SEVERE OUT-OF-TRIM CONDITION DURING ANY PHASE OF FLIGHT.

5. Maximum airspeed for operation of the autopilot system must not exceed the airplane indicated maximum speed V_{MO}/M_{MO}.
6. Operation of the autopilot system with a pitch trim malfunction is prohibited.
7. Do not use the autopilot or yaw damper below 200 ft above terrain during non-precision or Category I precision approach operations, or 600 ft above terrain during all other operations.
8. The maximum demonstrated adverse wind conditions for autopilot coupled approaches are 17 knots crosswind component and 11 knots tailwind component.
9. Nav and localizer captures must be accomplished with an intercept angle of less than 90°.

10. Category II approaches must be executed while coupled to the autopilot with the following limits:

Runway Visual Range (RVR)	1200 ft minimum
Decision Height (DH)	100 ft minimum
Headwind	17 knots
Tailwind	11 knots
Crosswind	17 knots
Autopilot must be disengaged at	80 ft
Two engine operations only	

11. During a Category II approach, if the autopilot malfunctions or disengages below 1000 ft AGL, the Category II approach must be discontinued. Hand flying the approach to Category I minimums is allowable.

VNAV

1. When using the VNAV system, the barometric altimeters must be used as the primary altitude reference for all operations.

2. Use of VNAV guidance for a V-MDA approach that includes a step-down fix between the final approach fix and missed approach point is prohibited.

3. VNAV altitudes must be displayed on the MFD map page or CDU legs page when utilizing VNAV for flight guidance.

4. Use of VNAV while conducting a missed approach procedure is prohibited.

5. Provided the FMS is receiving adequate usable sensor inputs, it has been demonstrated capable of and has been shown to meet the accuracy specifications of VNAV operation in accordance with the criteria of AC 20-129. Such VNAV approaches must be flown utilizing either the flight director or autopilot.

6. VNAV approach guidance to a DA is not authorized if the reported surface temperature is below the Baro-VNAV minimum temperature limitation specified on the applicable RNAV approach procedure chart.

   NOTE: Barometric VNAV guidance during approach including the approach transition, final approach segment and the missed approach procedure is not temperature compensated. Operating at uncompensated minimum IFR altitudes will not provide expected terrain and obstacle clearance for temperatures below ISA.

EGPWS

1. Navigation must not be predicated upon the use of the TAD. The Terrain Display is intended to serve as a situational awareness tool only and may not provide the accuracy and/or fidelity on which to solely base terrain avoidance maneuvering.

2. Pilots are authorized to deviate from their current air traffic control (ATC) clearance to the extent necessary to comply with an EGPWS warning.

3. In order to avoid giving unwanted alerts, the Terrain Awareness alerting must be inhibited by selecting the TERR INHIB switchlight when within 15 nautical miles of takeoff, approach or landing at an airport not contained in the EGPWS Airport Database. Refer to Honeywell document 060-4326-000 for airports contained in the installed EGPWS Terrain Database.

4. When the FMS is operating in the DR mode, the Terrain Awareness alerting must be inhibited by selecting the TERR INHIB switchlight.

NOTE: The terrain database, displays and alerting algorithms currently account for limited cataloged human-made obstructions in North America and Europe. If obstacle data is not in the database for a particular obstacle, the Obstacle Awareness alerting is not available for that obstacle.

TCAS II

Pilots are authorized to deviate from their current ATC clearance to the extent necessary to comply with a TCAS resolution advisory.

If ATC requires the transponder altitude reporting to be disabled, TCAS II must be turned off.

AIRSPEED LIMITATIONS

Maximum Operating Speed

V_{MO}	280 KIAS (Ventral fuel tank not empty, Flaps 0°)
V_{MO}	335 KIAS (Ventral fuel tank empty, Flaps 0°) Sea Level to 12,000 ft, reducing by 1 kt per 680 ft to 310 KIAS at 29,000 ft.

Maximum Operating Mach Number

M_{MO}	0.80 IMN
M_{MO}	0.73 IMN with Mach Trim System Fail/ Inoperative and Autopilot disengaged.

NOTE: The maximum operating speeds and operating Mach numbers as given above shall not be deliberately exceeded in any regime of flight (climb, cruise or descent) except for the purpose of pilot training or routine test flights in accordance with Section 5, Sub-section 2 of the Pilot's Operating Manual (POM).

If the limits are inadvertently exceeded, speed shall be reduced to or below the limiting values as quickly as possible.

Maneuvering Speed

V_A	196 KIAS

NOTE: Maneuvering speed is the speed below which full application of aerodynamic controls will not result in excessive airplane loads. Maneuvers involving angles of attack near the stall should be confined to speeds below V_A.

Avoid rapid and large alternating control inputs, especially in combination with large changes in pitch, roll or yaw (e.g. large slip angles) as they may result in structural failures at any speed, including below V_A.

Wing Flaps Extended/Operating Speed

V_{FE}/V_{FO}	220 KIAS (Flaps 15°) 175 KIAS (Flaps 25°) 165 KIAS (Flaps 45°)

Procedural Use of Flaps 15° for Descent and Holding

The maximum airspeed for procedural use of flaps 15° for descent and holding is 220 KIAS.

The maximum altitude for use is 15,000 ft. Such use of wing flaps is not permitted in icing conditions.

Air Brakes

Air Brakes (Flaps 0° Only) .... No Limit

Landing Gear Extended/Operating Speed

V_{LE}/V_{LO} .... 220 KIAS

Bird Strike Speed

Under normal conditions the maximum permissible airspeed to meet bird strike requirements is 280 KIAS up to 8000 ft.

Following an airplane ground soak at temperatures below -10° C, the windscreen heat should be operative and selected ON for a minimum of 5 minutes prior to takeoff in ambient temperatures of below -10° C and for a minimum of 15 minutes prior to takeoff when ambient temperatures are below -20° C.

If the minimum times for windscreen heat operation have not been achieved or in the case of windscreen heat failure followed by flight in ambient temperature below -10° C, the maximum permissible airspeed is 257 KIAS up to 8000 ft.

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MISCELLANEOUS LIMITATIONS

Air Brakes

In flight, the air brakes must not be operated when the flaps are extended to any position.

Cabin Emergency Overwing Exit

The internal cabin emergency overwing exit locking pin, if installed, must be removed and stowed before each flight.

Cabin High Datum

Cabin High Datum shall only be selected when operating into airfields greater than 9000 ft elevation.

Crew Seats

Both crew seats shall be locked in position during takeoff and landing. When installed and in use, the 3rd crew member seat shall be locked in position; when not in use, it shall be folded and stowed or removed from the airplane.

Inter-compartment Door

When a door is provided between the crew and passenger compartments, it shall be secured in the open position during takeoff and landing.

Lift Dump

Lift dump is to be used only when the airplane is on the ground.

Maneuvering Load Factor Limitations

Operation is limited to normal flying maneuvers and aerobatic maneuvers are not permitted.

The maximum accelerations (i.e. load factors) for which the structure is approved are 2.0g with flaps extended and 2.73g with flaps fully retracted.

Maneuvers exceeding these values can cause permanent distortion of the structure and must be avoided.

Minimum Flight Crew

The minimum crew is two pilots.

Nosewheel Tires

The airplane must be installed with chined nosewheel tires.

Number of Occupants

The total number of persons carried shall not exceed 17 nor that for which approved seating accommodation is provided.

Pressure Cabin

The cabin shall not be pressurized during takeoff and landing. Maximum pressure differential for normal operations is 8.55 lb/in^2.

NOTE: The safety valve is set to operate between 8.6 to 8.8 lb/in^2 *(59.3 to 60.7 kPa).*

Rudder Bias

The rudder bias switches must be ON and the systems operative during each takeoff.

TEMPORARY CHANGE

P/N 140-590032-0005TC13

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005, Dated Nov 30, 2001, or later revision for Hawker 800XP airplanes equipped with Pro Line 21 avionics.
AIRPLANE SERIAL NUMBERS AFFECTED:	Hawker 800XP 258541, 258556, 258567 and After.
DESCRIPTION OF CHANGE:	Addition of ditching information and procedures.
FILING INSTRUCTIONS:	Insert this Temporary Change Page 1 of 1 to face Page 25 in Section 2 - LIMITATIONS.

SECTION 2 - LIMITATIONS

MISCELLANEOUS LIMITATIONS

Read the following information as an addition to Section 2:

Ditching

After ditching, do not open the main cabin door.

Approved By: ....

Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 3/14/05 ....

Smoking

When the airplane is being operated in the Transport Category (Passenger), smoking in the toilet compartment is prohibited.

Placards summarizing this limitation shall be provided inside and outside each toilet and shall not be obscured.

System Gage Markings

Red Arc/Red Radial	Maximum or minimum limit.
Yellow Arc	Cautionary range permissible for short duration or in special circumstances - refer to individual limitations.

Weather Radar

Do not use the weather radar in the vicinity of ground personnel. A hazardous area extends up to 2 feet in front of the radar dish.

Wheel Brakes

NOTE: If any of the wheels' fusible plugs blow, the brakes must be inspected and certified serviceable before the next takeoff.

After the airplane has made a normal landing or a stop from a rejected takeoff, a waiting period should be established to make sure the brakes are both sufficiently cool and in a serviceable condition for a further rejected takeoff (critical case).

After Rejected Takeoff

Required period from completion of taxi-in following a rejected takeoff from a speed of 90 KIAS or less, to before start of taxi-out for takeoff.

After a single rejected takeoff	25 minutes
After two or more successive rejected takeoffs	45 minutes

If the rejected takeoff is made from a speed greater than 90 KIAS, the brakes must be inspected and certified to be serviceable before the next takeoff.

After Normal Landing

The required waiting period from completion of taxi-in from landing to before start of taxi-out for takeoff is 5 minutes, except when the take-off weight exceeds the values given in Table 1.

When the weight exceeds these values, a period of 30 minutes must be allowed. The table is based on still air and a downhill slope not exceeding 1/2%.

Corrections for more adverse conditions are given in the *NOTES* below Table 1.

Table 1 - Take-off Weights for Wheel Brakes Waiting Period

Field Pressure Altitude ft	***Temperature °C***							
	-20	-10	0	10	20	30	40	50
	Take-off Weight							
14,000	21,100 lb 9570 kg	20,500 lb 9298 kg	20,000 lb 9071 kg	19,500 lb 8845 kg	19,300 lb 8754 kg	19,100 lb 8663 kg		
13,000	21,600 lb 9797 kg	21,000 lb 9525 kg	20,400 lb 9253 kg	19,900 lb 9026 kg	19,700 lb 8935 kg	19,500 lb 8845 kg		
12,000	22,100 lb 10,014 kg	21,500 lb 9752 kg	20,900 lb 9480 kg	20,400 lb 9253 kg	20,000 lb 9071 kg	19,900 lb 9026 kg		
11,000	22,600 lb 10,251 kg	22,000 lb 9979 kg	21,400 lb 9706 kg	20,900 lb 9480 kg	20,400 lb 9253 kg	20,300 lb 9208 kg		
10,000	23,100 lb 10,478 kg	22,500 lb 10,205 kg	21,900 lb 9933 kg	21,300 lb 9661 kg	20,800 lb 9434 kg	20,600 lb 9344 kg		
9000	23,800 lb 10,795 kg	23,100 lb 10,478 kg	22,400 lb 10,160 kg	21,800 lb 9888 kg	21,200 lb 9616 kg	21,000 lb 9525 kg	21,000 lb 9525 kg	
8000	24,500 lb 11,113 kg	23,700 lb 10,750 kg	22,900 lb 10,387 kg	22,300 lb 10,115 kg	21,700 lb 9843 kg	21,400 lb 9706 kg	21,300 lb 9661 kg	
7000	25,100 lb 11,385 kg	24,400 lb 11,067 kg	23,500 lb 10,659 kg	22,900 lb 10,387 kg	22,200 lb 10,069 kg	21,700 lb 9843 kg	21,700 lb 9843 kg	
6000	25,600 lb 11,612 kg	25,000 lb 11,339 kg	24,000 lb 10,886 kg	23,500 lb 10,659 kg	22,700 lb 10,296 kg	22,000 lb 9979 kg	22,000 lb 9979 kg	
5000	26,300 lb 11,929 kg	25,600 lb 11,612 kg	24,800 lb 11,249 kg	24,200 lb 10,977 kg	23,400 lb 10,614 kg	22,700 lb 10,296 kg	22,400 lb 10,160 kg	
4000	27,000 lb 12,247 kg	26,200 lb 11,884 kg	25,500 lb 11,566 kg	24,900 lb 11,294 kg	24,100 lb 10,931 kg	23,200 lb 10,523 kg	22,800 lb 10,342 kg	22,800 lb 10,342 kg
3000	27,600 lb 12,519 kg	26,800 lb 12,156 kg	26,100 lb 11,838 kg	25,500 lb 11,566 kg	24,700 lb 11,203 kg	23,900 lb 10,840 kg	23,200 lb 10,523 kg	23,200 lb 10,523 kg
2000	28,000 lb 12,700 kg	27,500 lb 12,473 kg	26,700 lb 12,111 kg	26,000 lb 11,793 kg	25,400 lb 11,521 kg	24,500 lb 11,113 kg	23,700 lb 10,750 kg	23,600 lb 10,704 kg
1000	28,000 lb 12,700 kg	28,000 lb 12,700 kg	27,300 lb 12,383 kg	26,700 lb 12,111 kg	26,000 lb 11,793 kg	25,200 lb 11,430 kg	24,300 lb 11,022 kg	23,900 lb 10,840 kg
Sea Level	28,000 lb 12,700 kg	28,000 lb 12,700 kg	28,000 lb 12,700 kg	27,300 lb 12,383 kg	26,600 lb 12,065 kg	25,800 lb 11,702 kg	24,900 lb 11,294 kg	24,300 lb 11,022 kg

NOTES:

1. *In 1 - 5 knot tailwind subtract 1500 lb (680 kg).*
2. *In 6 - 10 knots tailwind subtract 3000 lb (1360 kg).*
3. *If the downhill slope exceeds 1/2%, subtract 250 lb (113 kg).*
4. *Take-off weight as limited by climb requirements may be more restrictive when operating in shaded areas.*
5. *Performance appropriate to sea level shall be used when the field pressure altitude is below sea level.*

SECTION 3

EMERGENCY PROCEDURES

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ENGINES

ENGINE FIRE, FAILURE or INADVERTENT THRUST REVERSER DEPLOYMENT DURING TAKEOFF

Below V_1 - Takeoff Aborted

Thrust levers..Close
Brakes...Apply
AIR BRAKES...Deploy
Thrust reversers...Deploy

Complete as applicable:

ENGINE FIRE ON GROUND procedure - this section.

EMERGENCY EVACUATION procedure - this section.

ENGINE FIRE, FAILURE or INADVERTENT THRUST REVERSER DEPLOYMENT DURING TAKEOFF

After V_1 - Takeoff Continued

LANDING GEAR
(when positive climb established)..................UP
MAIN AIR VALVES...CLOSE Both
F/DK VALVE...CLOSE

Airspeed..Maintain V_2
APR...Verify Operation
FLAPS...Up - after level-off and attaining V_2 +10 kts.

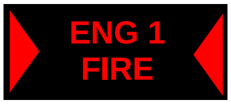
After attaining a minimum altitude of 400 ft AGL, complete as applicable:

ENGINE FIRE IN FLIGHT procedure - this section.

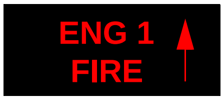
ENGINE SHUTDOWN or FAILURE IN FLIGHT procedure - this section.

INADVERTENT THRUST REVERSER DEPLOYMENT IN FLIGHT procedure - this section.

ENGINE FIRE IN FLIGHT



Fire Bell Sounds and



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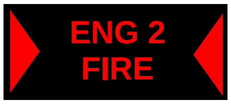
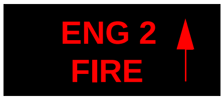


Fire Bell Sounds and



Thrust lever (affected engine)	**Close**

If Fire Warning Persists

HP COCK (affected engine)	**Close**
LP COCK (affected engine)	**Close**
ENG EXT	**SHOT 1**

If Engine Shutdown Occurs During Initial Climb

MAIN AIR VLVs 1 & 2	**CLOSE**
F/DK VLV	**CLOSE**

GEN (affected engine)	TRIP
BUS TIE (if open)	CLOSE
MAIN AIR VLV (affected engine)	CLOSE
F/DK VLV (No. 2 engine only)	CLOSE
ENG SYNC	OFF
ALTERNATOR (affected engine)	OFF
WING FUEL/X-FEED/TRANSFER lever	X-FEED - Use pumps selectively to balance fuel.
TCAS	TA only

If Fire Warning Persists

ENG EXT	SHOT 2

If Fire Warning Persists

Land at the nearest suitable airport.

If GEN AMPS Above Limit (300 AMPS)

Non-essential electrical loads	Progressively reduce until GEN AMPS less than limit.

NOTES:

1. *Always select the GEN to TRIP.*
2. *Do not attempt to restart engine.*
3. *If descending in icing conditions, select MAIN AIR VLV of operating engine to LP ON.*

ENGINE FIRE ON GROUND

Fire Bell Sounds and

or **or**

Fire Bell Sounds and

START PWR switch (starting only)..................PUSH FOR ABORT
HP COCK (affected engine)..............................Close
LP COCK (affected engine)..............................Close
ENG EXT (affected engine) ....SHOT 1

GEN ....TRIP
BUS TIE (if open)..CLOSE
WHEEL BRAKE lever ....PARK

After 30 seconds, if ENG FIRE remains illuminated:

ENG EXT (affected engine) ....SHOT 2
Other HP COCK..Close
Other LP COCK ....Close
Fuel pumps ....Both OFF

If Necessary, Complete **EMERGENCY EVACUATION** Procedure - this section.

NOTES:

1. *The fire extinguisher second shot is only available if generated power or external power is supplied.*
2. *Closing the No. 1 LP Cock will automatically shut down the APU (if installed) if it is running.*
3. *Do not attempt to restart the engine after a fire warning.*

ENGINE SHUTDOWN or FAILURE IN FLIGHT

Mechanical Failure, Malfunction, Separation or Inability to Maintain ITT or RPM Within Limits

If failure occurs during initial climb, complete all of the following checks

MAIN AIR VLVs 1 & 2 ....CLOSE
F/DK VLV ....CLOSE

If failure occurs other than initial climb, complete only the following checks

AP & YD..Disengage
HP COCK (affected engine).......................................Close
LP COCK (affected engine) ....Close
GEN (affected engine) ....TRIP
BUS TIE (if open)...CLOSE
MAIN AIR VLV (affected engine)................................CLOSE
F/DK VLV (No. 2 engine only) ....CLOSE
ENG SYNC ....OFF
ALTERNATOR (affected engine)................................OFF
WING FUEL/X-FEED/TRANSFER lever....................X-FEED - Use pumps selectively to balance fuel.
TCAS ....TA only

If GEN AMPS Above Limit (300 AMPS)

Non-essential electrical loads ....Progressively reduce until GEN AMPS less than limit.

NOTES:

1. *Always select the GEN to TRIP.*
2. *If descending in icing conditions, select MAIN AIR VLV, of the operating engine, to LP ON.*
3. *Do not attempt to restart engine if there are any reasons to suspect mechanical malfunction or failure.*

ENGINE FAILURE IN LANDING CONFIGURATION

If Landing Is Assured

Thrust (operating engine)..As required

Airspeed..V_{REF} minimum

HP COCK (affected engine).....................................Close

LANDING CHECKS..Complete

If Landing Is Not Assured

Thrust (operating engine)..As required

FLAP OVRD...Select

FLAPS..Retract to 25°

Airspeed..V_{REF} +20 KIAS

When Landing Is Assured

AP & YD...Disengage

FLAPS...As required

Airspeed...V_{REF} +5 KIAS (Flaps 25°)
V_{REF} (Flaps 45°)

OIL LOW PRESSURE

OIL 1
LO PRESS

or

OIL 2
LO PRESS

OIL PRESSURE .... Check gauge reading

If Below 25 PSI

HP COCK (affected engine) .... Close

Complete **ENGINE SHUTDOWN or FAILURE IN FLIGHT** procedure - this section.

DOUBLE ENGINE FAILURE

NOTE: Headsets and hats must be removed before donning oxygen mask.

ENG IGNITION 1 & 2 .... ON
Thrust levers .... Close
Crew oxygen .... Don masks
if above 15,000 ft.
Mic selector... OXY- MIC
if above 15,000 ft.
Engine indications.. Monitor

If Immediate Relight Is Unsuccessful

HP COCKS .... Close

ENG IGNITION 1 & 2... OFF

PANEL LTS (if at night) .... EMERG

MAIN AIR VLVs 1 & 2 .... CLOSE

F/DK VLV .... CLOSE

Descend to 30,000 ft at a speed up to V_{MO}/M_{MO}.

At or below 30,000 ft, attempt **WINDMILL RELIGHT** or **STARTER ASSISTED (NORMAL) RELIGHT** procedure - ABNORMAL PROCEDURES Sub-section 4.05.

NOTE: Use Electronic Standby Instrument System for flight and navigation.

If engine relight attempts are unsuccessful, glide at V_{ERC} + 5 KIAS.

Weight (lb X 1000)	18	19	20	21	22	23	24	25	26	27	28
V_{ERC} + 5 Kts	150	155	160	164	169	173	177	181	185	188	192

Make further relight attempts at 10,000 ft intervals.

INADVERTENT THRUST REVERSER DEPLOYMENT IN FLIGHT

UNLCK and **REVRS**

HP COCK (affected engine)..............................CLOSE

If Thrust Reverser Does Not Stow

AP & YD...Disengage
Airspeed...Maintain 150 KIAS
THRUST REVERSER POWER (affected engine) ....OFF

Complete ***ENGINE SHUTDOWN or FAILURE IN FLIGHT*** procedure, this section.

Refer to ***LANDING WITH ONE THRUST REVERSER DEPLOYED*** procedure - ABNORMAL PROCEDURES - Sub-section 4.05.

If Thrust Reverser Stows

THRUST REVERSER POWER (affected engine).... OFF

Complete ***ENGINE SHUTDOWN or FAILURE IN FLIGHT*** Procedure, this section.

NOTES:

1. *With one thrust reverser deployed, significant airframe buffet may occur. Rudder bias alone will not provide sufficient rudder force to overcome the yaw. The excess rudder force may be relieved by rudder trim. Level flight can be maintained with gear and flaps retracted, at the maximum landing weight, up to approximately 10,000 ft.*

2. *If necessary for increased engine power, the main air valve on the operating engine may be closed below 12,000 ft.*

3. *If an engine is shut down and the airplane is descending in icing conditions, the operating engine main air valve should be selected to LP ON.*

4. *If the affected reverser restows, do not attempt an engine restart.*

5. *Do not pull or reset any circuit breakers associated with the Thrust Reverser system.*

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AIR CONDITIONING & PRESSURIZATION

DEPRESSURIZATION

Horn sounds and CABIN ALTITUDE

NOTE: Headsets and hats must be removed before donning oxygen mask.

Crew oxygen .... Don masks
Mic selector .... OXY- MIC

If Cabin Depressurization Has Occurred

MAIN AIR VLVs 1 & 2 .... CLOSE
F/DK VLV .... OPEN fully
Cabin notices .... ON
Cabin altitude .... Check

If above 15,000 ft, complete **EMERGENCY DESCENT** procedure - this section.

If above 12,500 ft, confirm passenger oxygen masks have dropped.

If masks have not dropped, pull the PASSENGER SUPPLY EMERGENCY control knob.

WARNING: THE HIGHEST RECOMMENDED CABIN ALTITUDE FOR SUSTAINED FLIGHT IS 25,000 FT.

DUMP VALVE .... Check SHUT
MANUAL CABIN ALTITUDE CONTROL .... Check full DECREASE

NOTES:

1. *With the Flight Deck Valve open and No. 2 engine at high power, a cabin altitude of approximately 9000 ft can be maintained at 40,000 ft, assuming no abnormal leaks.*
2. *The flight compartment will become very hot. Bleed air temperature can be controlled by modulating right engine power.*

Subsequent Action

When the airplane is below 15,000 ft

F/DK VLV .... CLOSE
DUMP VALVE .... As required for ventilation

Continued Next Page ⟶

DEPRESSURIZATION (continued)

If Cabin Altitude Rising (Cabin Pressure Decreasing) or Cabin Altitude Fluctuating (Cabin Pressure Oscillating)

Altitude ....35,000 ft or below
No. 2 engine ....Set high power
MAIN AIR VLV 2 ....CLOSE
F/DK VLV ....OPEN fully
MAIN AIR VLV 1 ....CLOSE
Cabin altitude..Check

If approximately 8000 ft - continue flight.

If rising rapidly towards, or above 15,000 ft - complete **EMERGENCY DESCENT** procedure - this section.

NOTE: The fight compartment and cabin temperature will become very hot with the F/DK VLV fully open.

If Pressurization System Not Controlling

MAIN AIR VLVs 1 & 2 .... OPEN
F/DK VLV .... CLOSE
No. 2 engine .... Power as required
MANUAL CABIN ALTITUDE CONTROL .... Slowly turn towards INCREASE until cabin altitude increases slightly, or an increase in rate of climb is noted.
PRESSURIZATION CONTROL valve .... GROUND TEST
MANUAL CABIN ALTITUDE CONTROL .... Control as necessary

REAR EQUIPMENT BAY OVERHEAT

REAR BAY
OVHT

MAIN AIR VLVs 1 & 2..CLOSE
F/DK VLV ....OPEN fully

REAR BAY OVHT warning annunciator .... Check

If Warning Annunciator Remains Illuminated

NOTE: Headsets and hats must be removed before donning oxygen mask.

Crew oxygen .... Don masks
Mic selector... OXY-MIC
F/DK VLV .... CLOSE
Cabin notices .... ON
Cabin altitude.. Check

If above 15,000 ft, complete **EMERGENCY DESCENT** procedure - this section.

If above 12,500 ft, confirm passenger oxygen masks have dropped.

If masks have not dropped, pull the PASSENGER SUPPLY EMERGENCY control knob.

WARNING: THE HIGHEST RECOMMENDED CABIN ALTITUDE FOR SUSTAINED FLIGHT IS 25,000 FT.

Subsequent Action

Land at the nearest suitable airport.

When Below 15,000 ft

DUMP VALVE.. As required for ventilation

If Warning Annunciator Extinguishes

Descend as necessary to maintain comfortable cabin and cockpit conditions.

NOTES:

1. *With the Flight Deck Valve open and No. 2 engine at high power, a cabin altitude of approximately 9000 ft can be maintained at 40,000 ft, assuming no abnormal leaks.*
2. *The flight compartment will become very hot. Bleed air temperature can be controlled by modulating right engine power.*

HIGH PRESSURE AIR OVERHEAT

HP AIR 1 OVHT or **HP AIR 2 OVHT**

MAIN AIR VLV (affected engine)...................... CLOSE
F/DK VLV .... CLOSE

When Warning Extinguishes

MAIN AIR VLV (affected engine) .... LP ON
F/DK VLV .... As required

EMERGENCY DESCENT

Thrust levers ....Close
Speed ....M_{MO}/V_{MO} - unless structural damage is suspected.

AIR BRAKE ....OPEN

AP...Disengage
Cabin notices..ON
Notify ATC and obtain local altimeter setting.
Transponder...7700 if required

Continue maximum rate of descent until cabin altitude stabilizes below 15,000 ft, observing the minimum en-route altitude limitation.

DOUBLE GENERATOR FAILURE

BATT 1 CNTCTR

BATT 2 CNTCTR

GEN 1 FAIL **BUS TIE OPEN** **GEN 2 FAIL**

and

ELECT ↑

and

XS 1 FAIL **XS 2 FAIL**

INV 1 FAIL **STBY INV ON** **INV 2 FAIL**

NOTES:

1. *Copilot displays will be inoperative.*
2. *Avoid flight in icing conditions. Airframe ice protection will not be available and ice accumulation may cause significant deterioration of performance.*

PANEL LTS (if required) .... EMERG
BATT .... EMERG
GEN 1 and 2 .... TRIP both
One generator .... Attempt to reset

NOTE: To attempt a reset, hold one GEN switch to CLOSE for 5 seconds and then release. If unsuccessful, hold the other GEN switch to CLOSE for 5 seconds and then release.

***Do not make** more than one reset attempt with each generator. If either generator is reset, do not attempt to reset the other one;* proceed as for **SINGLE GENERATOR FAILURE** - *ABNORMAL PROCEDURES - Subsection 4.05 and reset electrical services as required.*

Continued Next Page ⟶

DOUBLE GENERATOR FAILURE (continued)

If Generator Reset Unsuccessful

ENG CMPTERs 1 & 2 .... OFF
ENG ANTICE 1 & 2 .... ON
STBY INV .... Check ARM
XE FAIL .... If illuminated - proceed as for XE FAIL.

Electrical loads .... Reduce to minimum, at pilot's discretion.

NOTES:

1. *It is essential that electrical loads are kept to a minimum for flight. If this procedure is followed, there is sufficient battery power to maintain emergency loads for approximately 30 minutes. This assumes the continuous use of the following:*

   Left pitot heater; pilot's audio system; pilot's PFD; pilot's MFD; GPS 1 (Latitude/Longitude data on CDU 1 only); CDU 1; COMM 1; VHF NAV 1 (course guidance data on ESIS only); DME 1 (distance data on ESIS only); Transponder 1 (Mode C inoperative); ADC 1, AHRS 1 and intermittent use of:

   Chart lights .... 10 minutes total use

   Cabin temperature control .... In MANUAL mode

2. *Other PE services must be switched off or isolated by pulling the relevant circuit breakers.The following loads may be selected on at the pilot's discretion:*

Service	Duty Cycle In Minutes	Reduction In Flight Time In Minutes
Single Fuel Pump	5	2
	10	4
Landing Light	5	2
	10	4
ENG IGNITION ON Single Engine	10	0.5
ENG IGNITION ON Two Engines	10	1
One Engine Computer	5	0.75
	10	1.5
Two Engine Computers	5	1.5
	10	3

3. *The emergency flight time quoted is based upon the assumption that at the time double generator failure occurs, the airplane batteries are at a minimum allowable capacity of 80% and with an electrolyte temperature of -20°C.*

   These are the anticipated most severe conditions. More favorable conditions will extend the emergency flight time as will circumstances which permit limiting the use of all the services available.

Continued Next Page →

DOUBLE GENERATOR FAILURE (continued)

If More Than 30 Minutes From Landing

Main airplane batteries should provide electrical power to the Pilot’s PFD, MFD, CDU 1, VOR 1, DME 1, Transponder 1, Pilot’s Audio Panel, AHRS 1 and ADC 1 for a minimum of 30 minutes.

B1 & B2 voltage	Monitor

When B1 & B2 voltages decrease to approximately 21 volts:

Pilot’s MFD	REV
EMERG RADIO	On (located above DA-A circuit breaker panel).
CTL-23 Tuner	ON

As the main airplane batteries deplete, the Pilot’s PFD and DME 1 will fail. If Raytheon Aircraft Company Field Service Kit No. 149-3410 has been installed or Raytheon Aircraft Company Service Bulletin SB 24-3555 has been accomplished (correcting the Radio Master Bussing), Transponder 1 will also fail.

Standby battery No. 3 will provide power to AHRS 1, ADC 1 and a full display on the Pilot’s MFD for approximately 8 minutes. After that time, standby batteries No. 3 and 4 will provide power to CDU 1, VOR 1, COMM 1 and the Pilot’s Audio Panel.

If Raytheon Aircraft Company Field Service Kit No. 149-3410 has been installed or Raytheon Aircraft Company Service Bulletin SB 24-3555 has been accomplished (correcting the Radio Master Bussing), power will be provided to the Copilot’s Audio Panel.

Refer to the Electronic Standby Instrument System (ESIS) for flight and navigation information, which will be powered by standby battery No. 6.

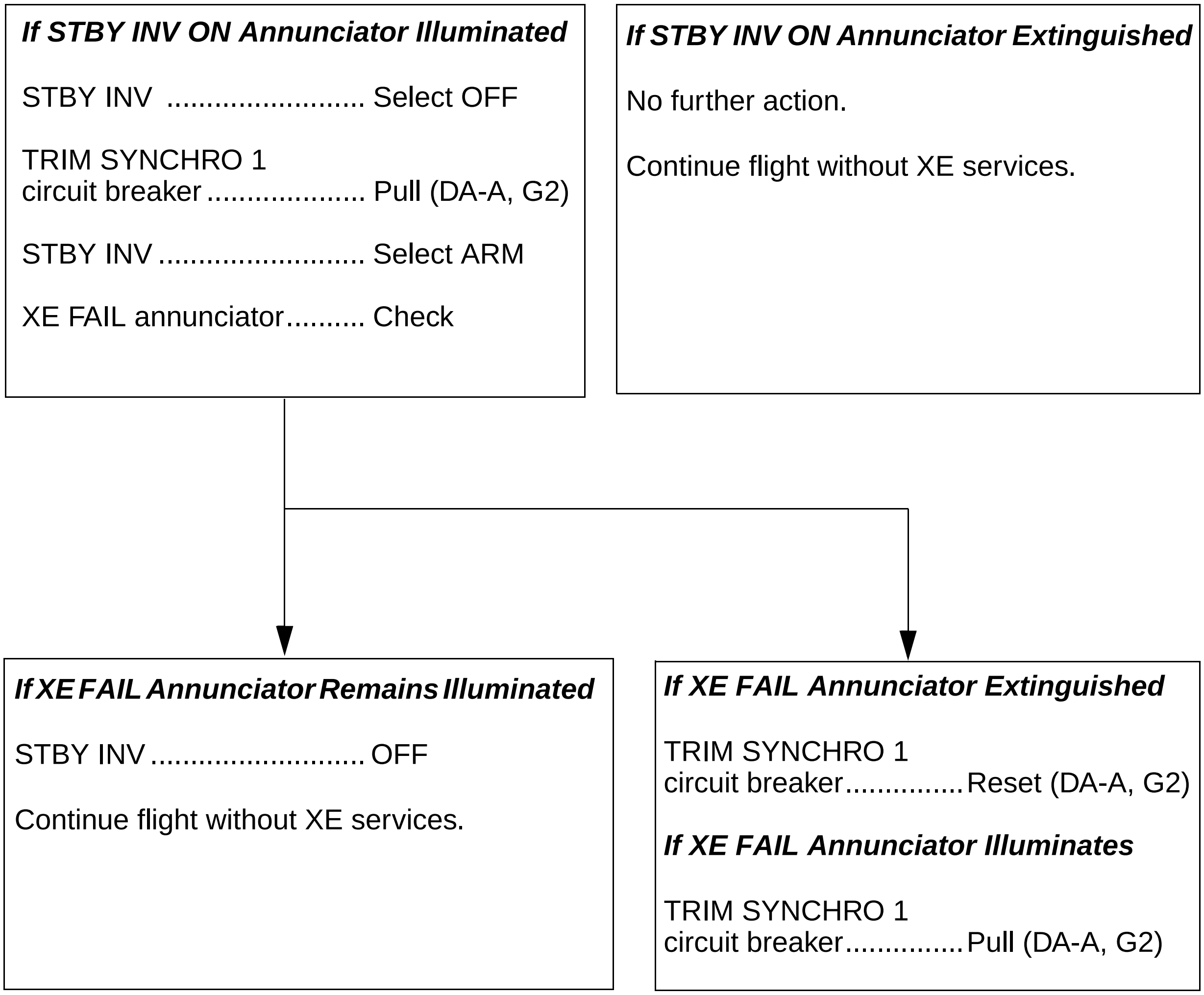
The CTL-23 tuner will be available for control of communication and navigation frequencies.

XE FAIL

and

STBY INV ON annunciator .... Check

Proceed as appropriate:



If STBY INV ON Annunciator Illuminated

STBY INV .... Select OFF

TRIM SYNCHRO 1
circuit breaker .... Pull (DA-A, G2)

STBY INV .... Select ARM

XE FAIL annunciator.......... Check

If STBY INV ON Annunciator Extinguished

No further action.

Continue flight without XE services.

If XE FAIL Annunciator Remains Illuminated

STBY INV .... OFF

Continue flight without XE services.

If XE FAIL Annunciator Extinguished

TRIM SYNCHRO 1
circuit breaker............... Reset (DA-A, G2)

If XE FAIL Annunciator Illuminates

TRIM SYNCHRO 1
circuit breaker............... Pull (DA-A, G2)

NOTE: Loss of XE will result in the loss of Mach Trim and Auto Pitch Trim.

XS 1 and XE FAIL

XS 1 FAIL **XE FAIL** and **ELECT ↑**

XE BUS PROT circuit breaker ....Pull (DA-D, A1)
STBY INV circuit breaker ....Reset (DA-D, B9)

If Tripped and Cannot Be Reset

TRIM SYNCHRO 1 circuit breaker............................Pull (DA-A, G2)
STBY INV circuit breaker..Reset (DA-D, B9)
STBY INV switch..Select OFF then ARM
XE FAIL annunciator ....Check

Proceed as appropriate:

If XE FAIL Annunciator Remains Illuminated

Proceed without XE and XS 1 busbar services

If XE FAIL Annunciator Extinguished

TRIM SYNCHRO 1
circuit breaker ....Reset (DA-A, G2)

Proceed without XS 1 busbar services

If XE FAIL Annunciator Illuminates

TRIM SYNCHRO 1
circuit breaker ....Pull (DA-A, G2)

Proceed without XS 1 and XE busbar services

NOTES:

1. *Loss of XS 1 will result in the loss of Stall IDENT 1, AOA Indicator, AOA Indexer Lights, Mach Trim and Auto Pitch Trim.*
2. *Loss of XE will result in the loss of Mach Trim and Auto Pitch Trim.*

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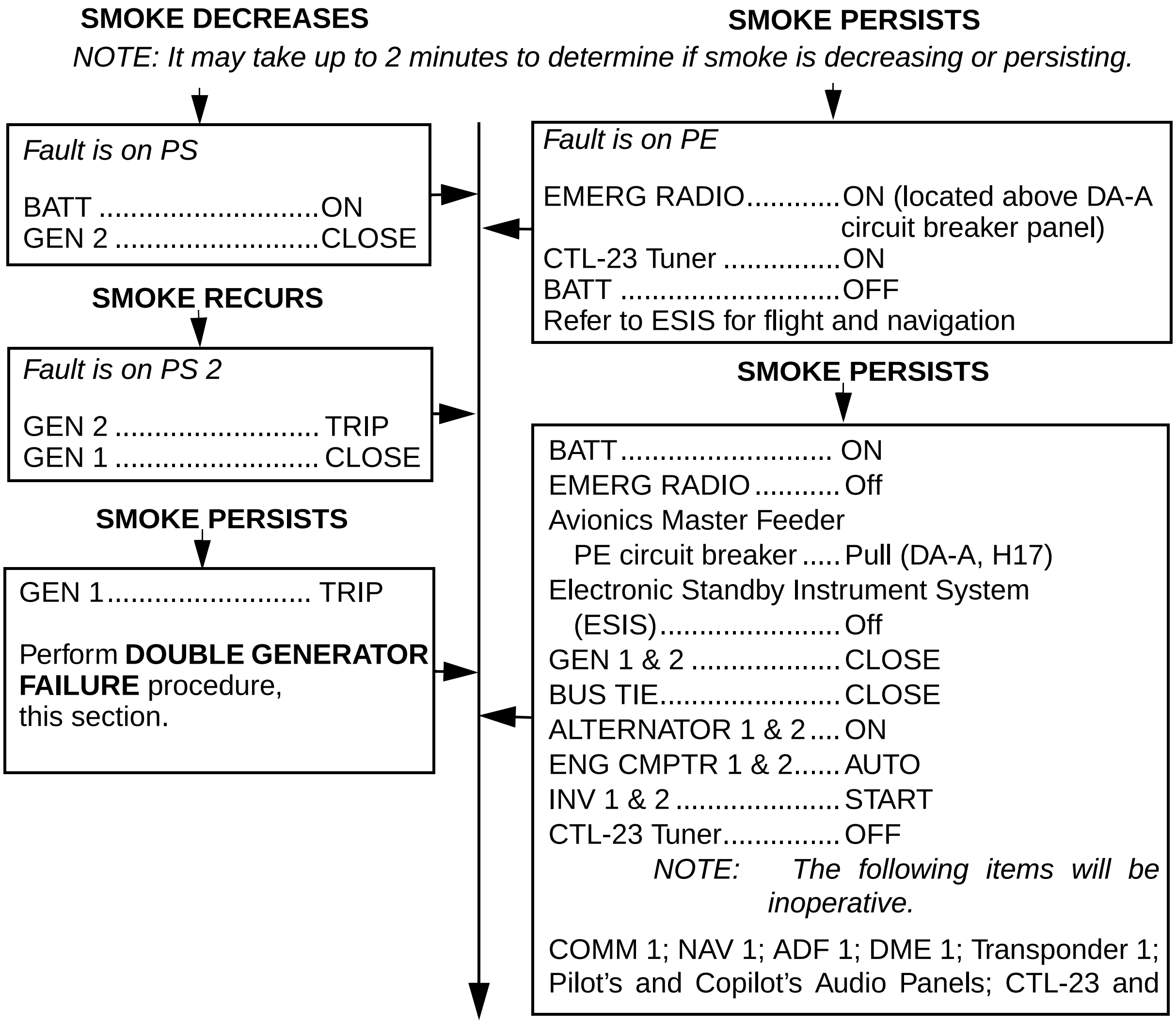
FIRE OR SMOKE

ELECTRICAL FIRE OR SMOKE

NOTE: Headsets and hats must be removed before donning oxygen mask.

Crew oxygen	**Don masks - 100% EMERG**
Mic selector	**OXY- MIC**
Smoke goggles	**Don and vent**
Cabin notices	**ON**

DUMP VALVE	OPEN slowly to assist smoke clearance but maintain cabin pressure.
PANEL LTS (if required)	EMERG
AUTOPILOT & YAW DAMPER	DISENGAGE
BATT	EMERG
GEN 1 & 2	TRIP both
ALTERNATORS 1 & 2	OFF
ENG CMPTER 1 & 2	OFF



SMOKE DECREASES

SMOKE PERSISTS

NOTE: It may take up to 2 minutes to determine if smoke is decreasing or persisting.

Fault is on PS

BATT	ON
GEN 2	CLOSE

SMOKE RECURS

Fault is on PS 2

GEN 2	TRIP
GEN 1	CLOSE

SMOKE PERSISTS

GEN 1	TRIP

Perform **DOUBLE GENERATOR FAILURE** procedure, this section.

Fault is on PE

EMERG RADIO	ON (located above DA-A circuit breaker panel)
CTL-23 Tuner	ON
BATT	OFF

Refer to ESIS for flight and navigation

SMOKE PERSISTS

BATT	ON
EMERG RADIO	Off
Avionics Master Feeder PE circuit breaker	Pull (DA-A, H17)
Electronic Standby Instrument System (ESIS)	Off
GEN 1 & 2	CLOSE
BUS TIE	CLOSE
ALTERNATOR 1 & 2	ON
ENG CMPTR 1 & 2	AUTO
INV 1 & 2	START
CTL-23 Tuner	OFF

NOTE: The following items will be inoperative.

COMM 1; NAV 1; ADF 1; DME 1; Transponder 1; Pilot's and Copilot's Audio Panels; CTL-23 and

ELECTRICAL FIRE OR SMOKE (continued

SMOKE CEASES

**Services may be re-instated individually as required.
Identify defective service and leave off.**

Visually verify that any fire has been extinguished and land at the nearest suitable airport.

WARNING: FLIGHT TIME IS LIMITED WITH BOTH GENERATORS TRIPPED.

NOTE: If depressurized, the DUMP VALVE may be opened fully to improve smoke clearance.

FUSELAGE FIRE OR SMOKE

Fire or smoke from cabin furnishings or equipment other than from electrical/electronic sources.

NOTE: Headsets and hats must be removed before donning oxygen mask.

Crew oxygen	**Don masks - 100% EMERG**
Mic selector	**OXY- MIC**
Smoke goggles	**Don and vent**
Cabin notices	**ON**

DUMP VALVE	OPEN slowly to assist smoke clearance but maintain cabin pressure.

One crew member don Protective Breathing Equipment (PBE) and use the hand-held fire extinguisher to take appropriate action.

Visually verify that any fire has been extinguished and land at the nearest suitable airport.

SMOKE FROM AIR CONDITIONING DUCTS

NOTE: Headsets and hats must be removed before donning oxygen mask.

Crew oxygen..Don masks - 100% EMERG
Mic selector ....OXY- MIC
Smoke goggles ....Don and vent
Cabin notices ....ON

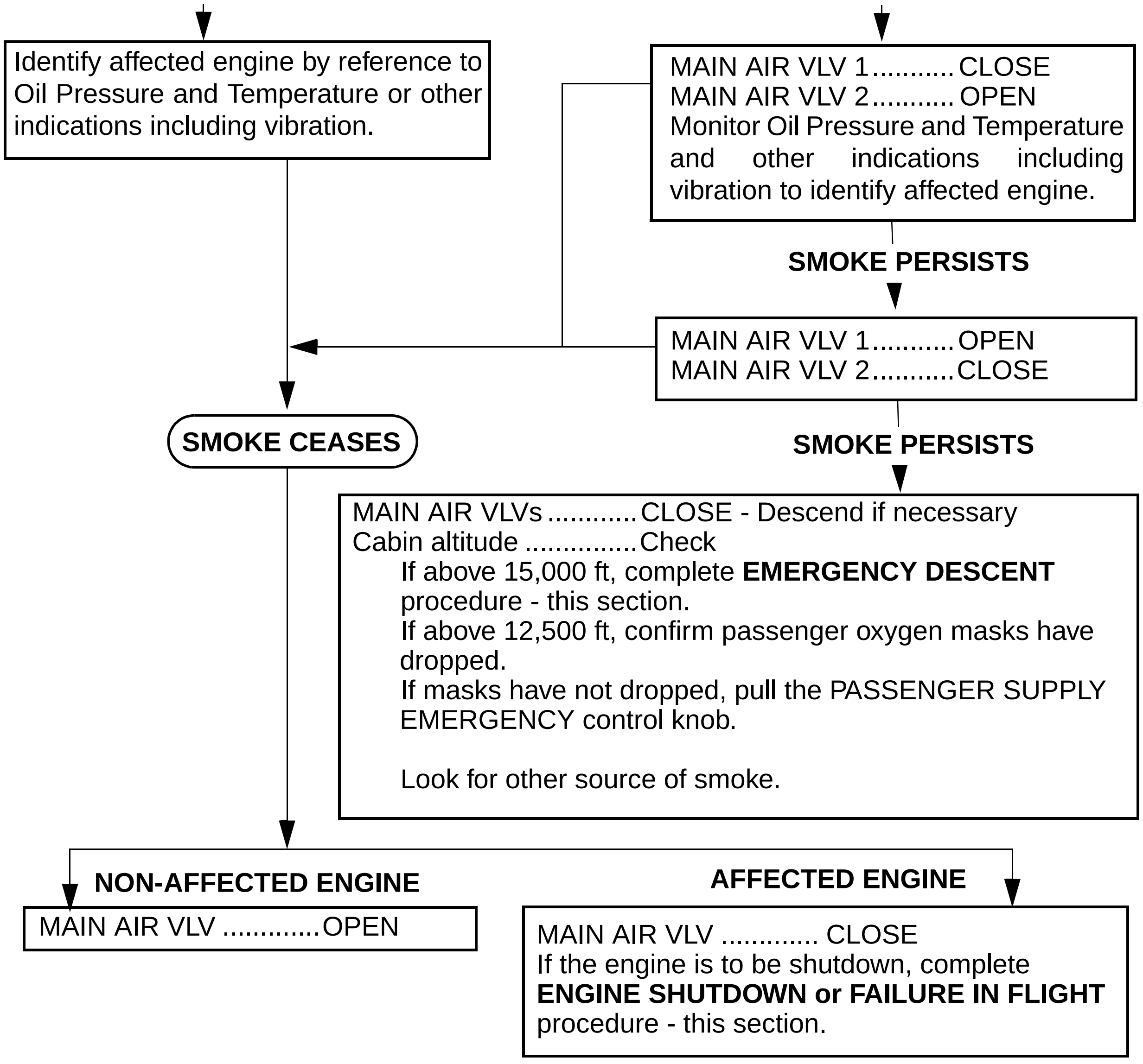
DUMP VALVE ....OPEN slowly to assist smoke clearance but maintain cabin pressure.

MAIN AIR VLVs 1 & 2 ....LP ON

F/DK VLV ....CLOSE

SMOKE DECREASES **SMOKE PERSISTS**

NOTE: It may take up to 2 minutes to determine if smoke is decreasing or persisting.



Identify affected engine by reference to Oil Pressure and Temperature or other indications including vibration.

MAIN AIR VLV 1...........CLOSE
MAIN AIR VLV 2...........OPEN
Monitor Oil Pressure and Temperature and other indications including vibration to identify affected engine.

SMOKE PERSISTS

MAIN AIR VLV 1...........OPEN
MAIN AIR VLV 2...........CLOSE

SMOKE CEASES

SMOKE PERSISTS

MAIN AIR VLVs ....CLOSE - Descend if necessary
Cabin altitude ....Check
If above 15,000 ft, complete **EMERGENCY DESCENT** procedure - this section.
If above 12,500 ft, confirm passenger oxygen masks have dropped.
If masks have not dropped, pull the PASSENGER SUPPLY EMERGENCY control knob.

Look for other source of smoke.

NON-AFFECTED ENGINE

MAIN AIR VLV ....OPEN

AFFECTED ENGINE

MAIN AIR VLV .... CLOSE
If the engine is to be shutdown, complete **ENGINE SHUTDOWN or FAILURE IN FLIGHT** procedure - this section.

Continued Next Page →

SMOKE FROM AIR CONDITIONING DUCTS (continued)

WARNING: THE HIGHEST RECOMMENDED CABIN ALTITUDE FOR SUSTAINED FLIGHT IS 25,000 FT.

Visually verify that any fire has been extinguished. If verification is not established, land at the nearest suitable airport.

NOTE: When depressurized, open DUMP VALVE fully to improve smoke clearance.

TEMPORARY CHANGE

P/N 140-590032-0005TC27

PUBLICATION AFFECTED: FAA Approved Airplane Flight Manual, P/N 140-590032-0005.

AIRPLANE EFFECTIVITY: All Hawker 800XP Pro Line 21 airplanes.

DESCRIPTION OF CHANGE: Additional procedures for THREE GREENS NOT INDICATED.

FILING INSTRUCTIONS: Insert Temporary Change 27, Page 1 of 2, into Section 3, EMERGENCY PROCEDURES, to face Page 24.

SECTION 3 - EMERGENCY PROCEDURES

LANDING GEAR

THREE GREENS NOT INDICATED

Refer to Page 2 of 2.

Approved By: M Baker ....

fa Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 2/28/2011 ....

Read the following in place of the existing procedures that precede the CAUTION on Page 25. The CAUTION and remaining procedures are unchanged.

THREE GREENS NOT INDICATED

Annunciators .... Test

Are all gear locked down as shown by standby indicators?

NO **YES** → **Make a normal landing**

↓

HYD SUPPLY pressure .... Check

If low:

MAIN HYDRAULIC FAILURE procedure,
Sub-section 4.05, ABNORMAL PROCEDURES .... PERFORM

If normal:

Is nose wheel (only) up (no green nose indicator lit)?

YES **NO** → **Refer to Lower Gear with Hand Pump procedure.**

↓

DUMP VALVE .... OPEN slowly to heat nose gear. Maintain cabin pressure.

F/DK VLV .... OPEN to add heat and cabin pressure.

Altitude .... Reduce as appropriate to terrain

Wait as long as fuel and other circumstances permit.

If nose gear remains locked .... Refer to Lower Gear with Hand Pump procedure.

If three greens indicated:

DUMP VALVE .... As required

F/DK VLV .... As required

Make a normal landing.

Lower Gear with Hand Pump

HORN .... Pull circuit breaker (DA-D, K1)

EGPWS .... Pull circuit breaker (DA-A, F8)

AUX HYD SYSTEM .... Pull handle - Do not reset

HAND PUMP .... Operate

LANDING GEAR

THREE GREENS NOT INDICATED

Annunciators	Test
HORN	Pull circuit breaker (DA-D, K1)
EGPWS	Pull circuit breaker (DA-A, F8)

Are all gear locked down as shown by standby indicators?

NO **YES** ⟶ **Make a normal landing**

↓

AUX HYD SYSTEM	Pull handle - Do not reset
HAND PUMP	Operate

CAUTION: WHEN OPERATING THE AUXILIARY HYDRAULIC SYSTEM TO LOWER THE LANDING GEAR, THE HAND PUMP ACTION MUST BE CONTINUED, AFTER 3 GREENS ARE ACHIEVED, UNTIL POSITIVE RESISTANCE IS FELT TO MAKE SURE THE LANDING GEAR IS DOWN AND LOCKED.

Proceed according to how many gear are locked down

NOTE: The position of the landing gear shall be established by checking both the normal (green) and standby indicators.

1. **All Gear Locked Down:**

LANDING GEAR handle	Confirm DOWN - Make a normal landing.

2. **Only Two Gear Locked Down:**

NOTE: The flight crew has the choice to land with the gear down or to retract the gear and perform an all gear up landing, as below. The pilot has the final responsibility and should proceed according to the conditions at hand and landing gear configuration experienced.

LANDING GEAR handle	Confirm DOWN - Go to **Prepare For Landing** procedure, next page.

3. **Only One Gear Locked Down or No Gear Locked Down:**

Make sure all landing gear are fully retracted by:

HAND PUMP	Fully down
AUX HYD SYSTEM	Push handle in
LANDING GEAR handle	Select UP

Confirm all gear are locked in the up position and go to **Prepare For Landing** procedure - next page.

Continued Next Page ⟶

THREE GREENS NOT INDICATED (continued)

Prepare For Landing

Passengers	Brief for emergency landing
Loose equipment	Secure
Emergency exit	Confirm clear
MAIN AIR VLVs 1 & 2	CLOSE
DUMP VALVE	OPEN

Landing

- Land at as low a weight as possible.
- Use normal landing flap setting.
- Touchdown at as low a speed as practicable.
- Do not use lift dump.
- Do not deploy thrust reversers.

After Touchdown

With Two Gear Locked Down

- Keep the unsupported wing or nose off the ground until at a low speed, but lower wing or nose before control is lost.
- After lowering the unsupported wing or nose, use wheel brakes and nosewheel steering, if appropriate, to keep in a straight line.
- If the nose gear is not locked down, select HP COCKS closed at touchdown.

With All Gear Up

- Select HP COCKS closed at touchdown.

NOSEWHEEL NOT CENTERED WITH LANDING GEAR LOCKED DOWN

If steering handwheel is offset to such a position that the nose gear is likely to steer the airplane off the runway:

Turn the handwheel to the center position

Does the handwheel remain centered with hand removed?

NO **YES** → **Make a normal landing**

↓

Perform an all gear up landing

HORN	Pull circuit breaker (DA-D, K1)
EGPWS	Pull circuit breaker (DA-A, F8)
LANDING GEAR handle	Select UP
All gear locked up	Confirm

Prepare For Landing

Passengers	Brief for emergency landing
Loose equipment	Secure
Emergency exit	Confirm clear
MAIN AIR VLVs 1 & 2	CLOSE
DUMP VALVE	OPEN

Landing

- Land at as low a weight as possible.
- Use normal landing flap setting.
- Touchdown at as low a speed as practicable.
- Do not use lift dump.
- Do not deploy thrust reversers.

After Touchdown

- Select HP COCKS closed at touchdown.

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WHEEL BRAKES

BRAKE FAILURE

Total or partial (asymmetric) failure of normal braking.

Brake pedals ....Release
WHEEL BRAKE lever.......................................EMERGY
Brake pedals ....Apply gently - Use one continuous application if possible.

NOTES:

1. *Anti-skid will be inoperative.*
2. *If nosewheel steering has failed, directional control can be maintained by differential braking and, at high speed, by rudder and aileron control.*
3. *If partial (asymmetric) braking is caused by brake hose failure, nosewheel steering may be available for up to 40 seconds.*
4. *Do not attempt to taxi.*

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AVIONICS

EGPWS WARNING

(PULL UP MESSAGE ON PFD and/or PULL UP, or TERRAIN, TERRAIN PULL UP or OBSTACLE, OBSTACLE, PULL UP AURAL ALERT)

NOTES:

1. *Only vertical maneuvers are recommended, unless operating in visual meteorological conditions (VMC), and/or the pilot determines, based on available information, that turning in addition to the vertical escape maneuver is the safest course of action.*
2. *Manual activation of the APR may provide extra thrust if deemed necessary.*

Go - Around button	**Push**
Thrust	**Take-off N_1**
Pitch attitude	**Increase and climb as required to avoid terrain/ obstacle.**

FLAPS	Retract to 15°
LANDING GEAR	Up
FLAPS	Up
AIR BRAKES	SHUT
EGPWS terrain display	Monitor
Pitch attitude	Maintain until warning ceases
ATC	Notify (if required)

WINDSHEAR WARNING

(RED WINDSHEAR MESSAGE ON PFD and/or WINDSHEAR, WINDSHEAR, WINDSHEAR AURAL ALERT)

NOTE: Manual activation of the APR may provide extra thrust if deemed necessary.

Go - Around button	**Push**
Thrust	**Take-off N_1**
Pitch attitude	**Increase as required to arrest descent, allowing airspeed to decrease to intermittent stick shaker activation.**

AIR BRAKES	SHUT
ATC	Notify (if required)

AUTOPILOT MALFUNCTIONS

ALTITUDE LOSSES

The maximum altitude losses observed during autopilot malfunction tests were:

Climb	450 ft
Cruise	300 ft
Descent	550 ft
Maneuvering	170 ft
Non-Precision Approach (one or two engine)	75 ft
Precision Approach (one or two engine)	75 ft

AUTOPILOT MISTRIM ANNUNCIATION

Illumination of a red boxed E (Elevator) or A (Aileron) annunciation on the PFDs indicate that the autopilot is flying the airplane in a mistrimmed condition. If the mistrim indication continues for more than a few seconds:

NOTE: Intentional or automatic stick-free disengagement of the autopilot into an annunciated red elevator mistrim indication will produce a significant airplane response in the direction of the mistrim force.

If a continuous mistrim indication is presented, the pilot should brace the flight controls and disconnect the autopilot. Upon disconnect, the pilot will experience a force in excess of 25 pounds. Re-engagement of the autopilot should not be attempted until the reason for the out of trim state has been isolated and corrected, and the airplane has been returned to a trimmed condition.

Flight controls	Hold firmly
AP	Disengage
Retrim airplane if necessary	
Fuel balance	Check and balance as required
AP	As required

Continued Next Page →

AUTOPILOT MALFUNCTIONS (continued)

AUTOPILOT TRIM FAIL ANNUNCIATION

Illumination of a red TRIM annunciation on the PFDs indicates that the autopilot pitch trim system has failed. The autopilot will not automatically disengage, but it may not function properly.

> *NOTE: A mistrimmed condition may occur in conjunction with the pitch trim failure. When the autopilot is disengaged in a mistrimmed condition, expect an abrupt change in control force.*

Flight controls .... Hold firmly
AP .... Disengage
Retrim airplane if necessary
AP .... As required

AUTOPILOT DISENGAGEMENT

The autopilot can be disengaged by:

1. Pushing the AP switch on either control wheel (Yaw Damper will disengage)
2. Pushing the GO-AROUND button on either control wheel (Yaw Damper remains engaged)
3. Actuation of either control wheel trim switch (Yaw Damper remains engaged)
4. Pushing the AP ENG button on the Flight Guidance Panel (Yaw Damper remains engaged)
5. Lowering the AP/YD DISC bar on the Flight Guidance Panel (Yaw Damper will disengage)

Autopilot disengagement will initiate an aural tone which can be cancelled by a second actuation of the:

1. AP switch
2. GO-AROUND button
3. Control wheel trim switch

CAT II FAILURE

If a red CAT II is observed on either PFD during a CAT II approach, execute a missed approach.

ELECTRONIC STANDBY INSTRUMENT SYSTEM (ESIS)

When a red ATT fail flag and a yellow HDG flag are displayed, the ESIS HDG information can continue to be used in straight and level unaccelerated flight.

FLIGHT DISPLAY FAILURE FLAGS

The following failure flags are available for display on the PFD. The flags will appear flashing red for 5 seconds and then remain illuminated.

In the following steps, # is 1 when referencing the pilot’s side and 2 when referencing the copilot’s side.

ALT

This annunciation indicates invalid altitude data from the selected ADC. The altitude tape and digital thousands readout are removed.

Relevant ADC reversion switch .... Select operative ADC

AOA

This annunciation indicates invalid data from the angle of attack system. The Reference Approach Speed (RAS) and Impending Stall Speed (ISS) cues will be removed and replaced with the default low speed cue. The stick shaker, stick pusher, AOA indicator and AOA indexer lights may be inoperative.

No in-flight action required.

NOTE: With the stick shaker and stick pusher inoperative, normal stall protection is not available. Continue flight with caution.

AP

This annunciation indicates a disengagement of the autopilot. The Yaw Damper may also disengage.

Automatic Disengagement

AP & YD Disengage button .... Push

Determine cause of disengagement

AP & YD .... As required

ATT

This annunciation indicates failure of the attitude data from the selected AHRS. The attitude display is removed.

Relevant AHRS reversion switch .... Select operative AHRS

DCP

This annunciation indicates failure of the respective display control panel. Display format, selected navigation and bearing sources remain unaffected, but control of the respective displays is lost.

No in-flight action required.

FD

This annunciation indicates that the respective flight director has failed. If coupled to the failed flight director, the autopilot will also disengage. If only one PFD is affected, flight director and autopilot functions may be regained by transferring control to the operative side.

Continued Next Page ⟶

FLIGHT DISPLAY FAILURE FLAGS (continued)

FMS #

This annunciation indicates that the selected FMS navigation data is invalid. The course pointer, lateral deviation bar and to/from pointer are removed.

Nav source .... Select another source

GS

This annunciation indicates that glideslope data is invalid and the glideslope pointer is removed.

If glideslope data is valid on the other PFD, the approach should be flown by referencing the operable side, or selecting the operable nav source.

HDG

This annunciation indicates invalid heading data from the selected source. The compass rose/arc will rotate to north-up.

Relevant AHRS reversion switch............................... Select operative AHRS

IAS

This annunciation indicates invalid airspeed data from the selected ADC. The airspeed readout and scale are removed.

Relevant ADC reversion switch................................. Select operative ADC

LOC #

This annunciation indicates that the selected localizer data is invalid. The course pointer and lateral deviation bar are removed. If localizer data is valid on the other PFD, the approach should be flown by referencing the operable side, or selecting the operable nav source.

RA

This annunciation indicates that the radio altitude data is invalid. The radio altitude digital display, radio minimums functions and the analog radio altitude display on the PFD will be inoperative.

EGPWS and TCAS functions will continue, but certain features will be inoperative.

VOR #

This annunciation indicates that the selected VOR data is invalid. The course pointer, lateral deviation bar and to/from pointer are removed. If VOR data is valid on the other PFD, continue flight by referencing the operable side, or selecting the operable VOR source.

VS

This annunciation indicates invalid vertical speed data from the selected ADC. The vertical speed pointer, scale and digital readout are removed.

Relevant ADC reversion switch................................. Select operative ADC

VNV

This annunciation indicates invalid VNAV data. The VNAV deviation pointer is removed.

No in-flight action required.

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Hawker 800XP

TEMPORARY CHANGE

P/N 140-590032-0005TC13

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005, Dated Nov 30, 2001, or later revision for Hawker 800XP airplanes equipped with Pro Line 21 avionics.
AIRPLANE SERIAL NUMBERS AFFECTED:	Hawker 800XP 258541, 258556, 258567 and After.
DESCRIPTION OF CHANGE:	Addition of ditching information and procedures.
FILING INSTRUCTIONS:	Insert this Temporary Change Page 2 of 2 to face Page 37 in Section 3 - EMERGENCY PROCEDURES.

SECTION 3 - EMERGENCY PROCEDURES

Read the following procedures as an addition to Section 3:

DITCHING

DITCHING PROCEDURES

NOTE: Ditching has not been demonstrated; however, the following procedures are recommended:

Preparation

Cabin Notices	ON
Passengers	Advise
Life Jackets	Don
Pressurization	Set cabin altitude of 1500 ft
DUMP VALVE	Check SHUT
External Lights	All On, unless reflections become a nuisance
Emergency Lights (if required)	On
HORN	Pull circuit breaker (DA-D, K1)
EGPWS	Pull circuit breaker (DA-A, F8)

Approach

LANDING GEAR handle	Check UP
A/P & YD	Disengage
FLAPS	45°
Airspeed	V_{REF}
MAIN AIR VLVs 1 & 2	CLOSE
Airspeed	Touchdown at the lowest practicable speed and descent rate.

After Touchdown

Overwing Emergency Exit	Open, evacuate airplane.

WARNING: DO NOT OPEN THE MAIN ENTRANCE DOOR.

EMERGENCY EVACUATION

In order to evacuate the airplane quickly, where possible the following procedures may be conducted concurrently. The pilot should brief actions to the copilot as appropriate.

Airplane .... Stop
WHEEL BRAKE lever...................................... PARK
HP COCKS.. Close
LP COCKS .... Close
EMERG LIGHTS (if required) .... MAN
PA .... Order evacuation
DUMP VALVE.. OPEN
BATT .... OFF

NOTES:

1. *Apply the parking brake as soon as possible to make sure the airplane does not move during evacuation.*
2. *Complete the* ***ENGINE FIRE ON GROUND*** procedure - *this section and the APU Fire procedure (if installed) if required.*
3. *If practicable, take account of the effect of wind conditions on the spread of fire.*
4. *The battery must be left on to make sure the PA functions.*
5. *COMM 1 must be used if communications with ATC is required.*

SECTION 4 - ABNORMAL / NORMAL PROCEDURES

This section is divided into the following Sub-sections:

Sub-section 4.05 ....ABNORMAL PROCEDURES

Sub-section 4.10 ....NORMAL PROCEDURES

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SUB-SECTION 4.05

ABNORMAL PROCEDURES

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ENGINES

ENGINE RELIGHT

CAUTION: RELIGHTS SHOULD NOT BE ATTEMPTED IF ENGINE FAILURE IS ACCOMPANIED BY SYMPTOMS OF INTERNAL ENGINE DAMAGE OR THERE IS NO INDICATION OF N_1.

IMMEDIATE RELIGHT

This procedure may be used if flame-out is detected quickly.

CAUTION: IF N_2 FALLS BELOW 15%, CLOSE THE HP COCK AND COMPLETE THE NORMAL RELIGHT procedure - this section.

ENG IGNITION (affected engine)............................. ON

Thrust lever (affected engine)................................... Close

NOTE: During relight, there may be a slow or erratic indication of fuel flow.

ITT .... Monitor

If relight unsuccessful (N_1 and N_2 RPM do not increase within 10 seconds) or

If ITT rapidly approaches 978° C

HP COCK (affected engine) .... Close

ENG IGNITION (affected engine)............................. OFF

If Engine Does Not Relight

Complete **ENGINE SHUTDOWN or FAILURE IN FLIGHT** procedure - EMERGENCY PROCEDURES - Section 3.

If Engine Has Relit

Thrust lever (affected engine)................................... Set as required

ENG IGNITION (affected engine)............................. OFF

Engine indications .... Normal

GEN.. CLOSE

BUS TIE (if open) .... CLOSE

WINDMILL RELIGHT

Airspeed and altitude	Within envelope shown in Figure 4.05.1.
N_1 RPM	Indicating
N_2 RPM	10% or more
HP COCK (affected engine)	Close
LP COCK (affected engine)	OPEN
ENG ANTICE (affected engine)	OFF
Fuel pump (affected engine)	ON

NOTE: It is recommended that windmill relights should not be attempted with the engine computer inoperative.

ENG CMPTR (affected engine)	Check ON
ENG SYNC	OFF
MAIN AIR VLV (affected engine)	CLOSE
ENG IGNITION (affected engine)	ON
HP COCK (affected engine)	OPEN

NOTE: During relight, there may be a slow or erratic indication of fuel flow.

ITT	Monitor

If Relight Unsuccessful (N_1 and N_2 RPM do not increase within 10 seconds) or

If ITT Rapidly Approaches 978° C or

If No Oil Pressure Indicated Within 10 Seconds of N_1 and N_2 RPM Indication.

HP COCK (affected engine)	Close

CAUTION: IF RELIGHT IS UNSUCCESSFUL, WAIT A MINIMUM OF 10 SECONDS BEFORE MAKING ANOTHER ATTEMPT.

After Start

ENG IGNITION (affected engine)	OFF
GEN (affected engine)	Check on-line
BUS TIE (if open)	CLOSE
Engine indications	Normal
MAIN AIR VLV (affected engine)	OPEN
Thrust lever (affected engine)	Set as required
ALTERNATOR (affected engine)	ON
ENG SYNC	As required
WING FUEL/ X-FEED/TRANSFER lever	WING FUEL - when fuel balanced

STARTER ASSISTED (NORMAL) RELIGHT

Airspeed and altitude	Within envelope shown in Figure 4.05.1.
N_1 & N_2 RPM	Both indicating
HP COCK (affected engine)	Close
LP COCK (affected engine)	OPEN
ENG ANTICE (affected engine)	OFF
Fuel pump (affected engine)	ON
ENG SYNC	OFF
MAIN AIR VLV (affected engine)	CLOSE
START PWR	Push PWR ON - light illuminates
ENG 1 or 2 (affected engine)	Push OPERATING - light illuminates.
HP COCK (affected engine)	ON at or above 10% N_2

NOTE: During relight, there may be a slow or erratic indication of fuel flow.

ITT	Monitor

If Relight Unsuccessful (N_1 and N_2 RPM do not increase within 10 seconds) or

If ITT Rapidly Approaches 978° C or

If No Oil Pressure Indicated Within 10 Seconds of N_1 and N_2 RPM Indication.

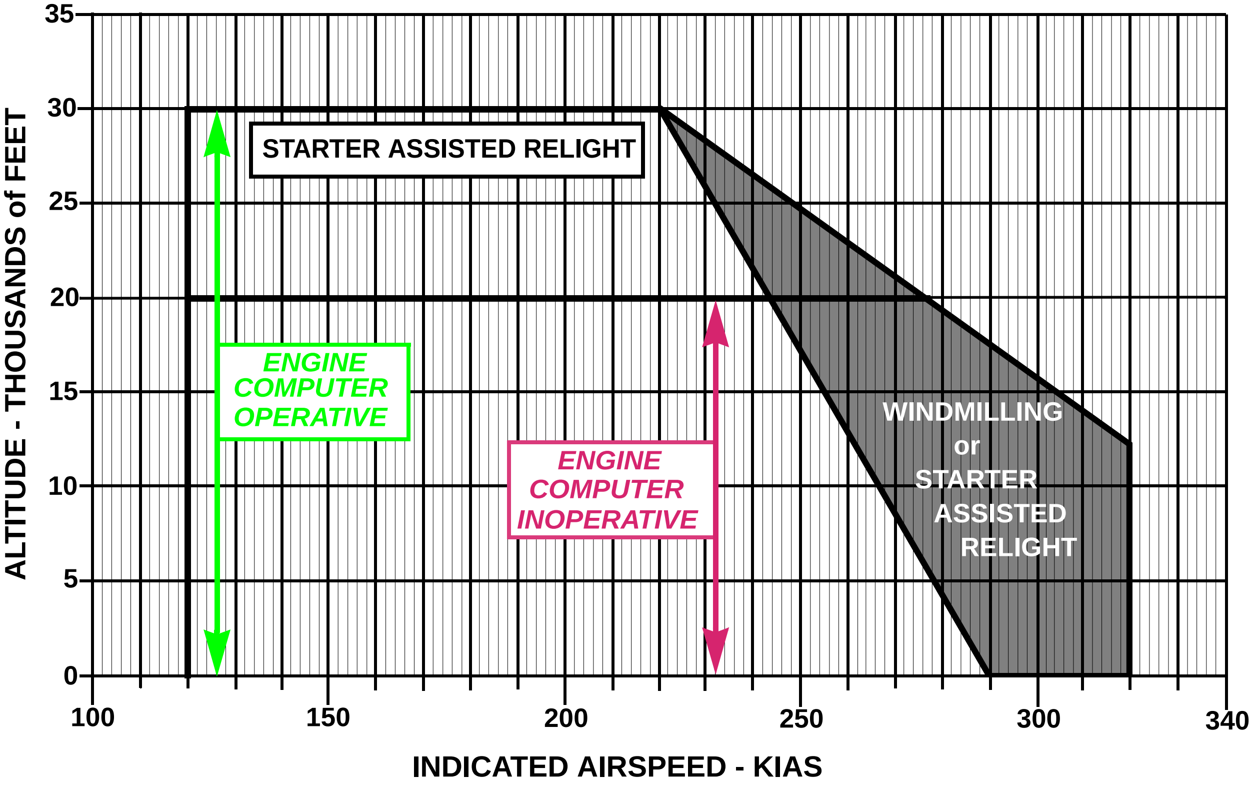
HP COCK (affected engine)	Close
START PWR	PUSH FOR ABORT

CAUTION: IF RELIGHT IS UNSUCCESSFUL, WAIT A MINIMUM OF 10 SECONDS BEFORE MAKING ANOTHER ATTEMPT.

After Start

ENG 1 or 2 (affected engine)	Light out above 45% N_2
START PWR	Off - light extinguishes
GEN (affected engine)	Check on-line
BUS TIE (if open)	CLOSE
Engine indications	Normal
MAIN AIR VLV (affected engine)	OPEN
Thrust lever (affected engine)	Set as required
ALTERNATOR (affected engine)	ON
ENG SYNC	As required
WING FUEL/X-FEED/TRANSFER lever	WING FUEL - when fuel balanced

ENGINE RELIGHT ENVELOPE



Engine Relight Data

	STARTER ASSISTED RELIGHT	WINDMILL RELIGHT
ENGINE COMPUTER OPERATIVE	Complete envelope available (including gray shaded area).	Complete gray shaded area of envelope available.
ENGINE COMPUTER INOPERATIVE	Unshaded and gray shaded areas of envelope available below 20,000 ft.	Gray shaded area of envelope available below 20,000 ft.

NOTE: It is recommended that windmill relights should not be attempted with the engine computer inoperative.

Figure 4.05.1

ENGINE COMPUTER FAILURE

ENG 1 CMPTER or **ENG 2 CMPTER**

NOTE: The engine synchronizer disengages with an engine computer failure.

If Malfunction Occurs During Takeoff

Below 80 KIAS .... Abort

Above 80 KIAS .... Continue takeoff - Keep engine within N_{1} REF.

If Malfunction Occurs Airborne

ENG CMPTR (affected engine) .... OVSPD PROT

Thrust lever (affected engine) .... Adjust to keep required RPM & ITT - Monitor limitations.

If Malfunction Occurs at Maximum Continuous Power

Thrust lever (affected engine) .... Adjust to achieve maximum continuous ITT (968° C).

Engine indications .... Monitor limitations

NOTES:

1. *Time required for a slam acceleration, from idle to take-off power, will be greatly increased.*
2. *To minimize acceleration time on the effected engine, ENG ANTICE should be selected OFF and the MAIN AIR VLV selected to CLOSE.*

Landing

ENG ANTICE (affected engine)................................ OFF (if conditions permit)

MAIN AIR VLV (affected engine) .... CLOSE (if conditions permit)

NOTES:

1. *If operating either or both engines in the Manual Mode, special care must be taken to account for the slow engine acceleration. According to the conditions, acceleration time* ***will*** *be greatly increased.*
2. *To minimize acceleration time, Engine Antice and the Main Air Valve, on the affected engine(s), should be turned OFF and CLOSE if conditions permit.*

ABNORMAL INDICATIONS OR BEHAVIOR

If ITT or RPM Above Limits

Thrust lever (affected engine).....................................Close

If Indications Not Controlled Within Limits:

HP COCK (affected engine).......................................Close

Complete **ENGINE SHUTDOWN or FAILURE IN FLIGHT** procedure - EMERGENCY PROCEDURES - Section 3.

If RPM Fluctuating or Not Controllable

Thrust lever (affected engine).....................................Mid-range position

ENG CMPTR (affected engine)..................................OVSPD PROT

Thrust lever (affected engine).....................................Adjust to keep required RPM - Monitor ITT Limitations.

ENG SYNC ....OFF

If Oil Temperature Above Limits

Thrust lever (affected engine).....................................Reduce as required

Oil temperature ....Monitor

Oil pressure..Monitor

If oil temperature does not return to within limits within 2 minutes, or if oil pressure is not maintained within allowable limits:

Thrust lever (affected engine).................................Close

Complete **ENGINE SHUTDOWN or FAILURE IN FLIGHT** procedure - EMERGENCY PROCEDURES - Section 3.

Note Maximum Temperature and Duration.

If oil temperature returns to within limits:

Continue flight with the affected engine at the reduced power setting.

HIGH ENGINE VIBRATION

If engine malfunction is confirmed or general vibration is present, complete **ENGINE SHUTDOWN or FAILURE IN FLIGHT** procedure - EMERGENCY PROCEDURES - Section 3.

If high engine vibration is suspected, complete the following procedure on each engine, one at a time:

- Slowly retard the engine thrust lever to idle and monitor the engine instruments for any abnormalities. Note if there is any reduction in the vibration levels as the thrust lever is being retarded.
- Slowly move the thrust lever to its original position and note if there is any increase in vibration levels or if there are any abnormalities on the engine instruments.
- If it has been determined from this procedure that there are high levels of vibration from one of the engines, complete **ENGINE SHUTDOWN or FAILURE IN FLIGHT** procedure - EMERGENCY PROCEDURES - Section 3, on the affected engine.

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ONE ENGINE INOPERATIVE APPROACH and LANDING

Altimeters	Set and checked
Fuel	Check quantity and balance
F/DK VLV	CLOSE
EXTERIOR LIGHTS	As required
Cabin notices	On
Seats and harnesses	Secure
Nosewheel steering	Handwheel clear
V_{REF}/V_{APP} , Landing distance	Set and computed
AIR BRAKES	SHUT
APR	ARM
FLAP OVRD	Select
FLAPS	15°
Airspeed	V_{REF} +25 KIAS minimum
LANDING GEAR	Down
Nosewheel steering	Centered

If flying a precision approach, at the final approach fix

FLAPS	25°
Airspeed	V_{REF} +20 KIAS

When it is certain there is no possibility of a go-around

FLAPS	45°
Airspeed	V_{REF} (111 KIAS minimum)
AP & YD	Disengage

NOTE: If reverse thrust is used, it is recommended that both thrust reversers be deployed.

ONE ENGINE INOPERATIVE GO-AROUND

Thrust (operating engine)	Take-off N_1
GA mode	Select
Pitch attitude	10° to 12°
Airspeed	V_{REF} minimum
FLAPS	Retract to 15°
LANDING GEAR	Retract after positive climb
Airspeed	Accelerate to V_{REF} +10 Kts
FLAPS	Up

OVERWEIGHT LANDING

Perform normal **APPROACH and LANDING CHECKS** - NORMAL PROCEDURES - Sub-section 4.10.

NOTES:

1. *Touch down as smoothly as possible.*
2. *For the purpose of brake cooling, an overweight landing should be considered as a rejected takeoff.*

FLAPS UP or 15° APPROACH and LANDING

NOTE: Lowering the landing gear will improve airspeed stability.

Perform normal **APPROACH and LANDING CHECKS** - NORMAL PROCEDURES - Sub-section 4.10.

FLAP OVRD..Select
Airspeed...V_{REF} +30 KIAS
(V_{REF} +45 KIAS in icing conditions)

When Landing Is Assured

Airspeed...V_{REF} +15 KIAS
(V_{REF} +30 KIAS in icing conditions)

After Touchdown

Immediately Lower Nosewheel to the Runway
AIR BRAKE..OPEN
Wheel Brakes ....As required
Thrust Reversers ....As required

NOTES:

1. *Landing distance will increase approximately 30% above the landing distance with FLAPS 45 °.*
2. *If a No-Flap approach is made in icing conditions, maintain an airspeed of V_{REF} +45 KIAS. When the landing is assured, slow to V_{REF} + 30 KIAS. No-Flap landing distance, in icing conditions, is approximately twice the normal landing distance with FLAPS 45 °.*

FLAPS 25° APPROACH and LANDING

Perform normal **APPROACH and LANDING CHECKS** - NORMAL PROCEDURES - Sub-section 4.10.

FLAP OVRD...Select
Airspeed...V_{REF} +20 KIAS

When Landing Is Assured

Airspeed...V_{REF} +5 KIAS

After Touchdown

Lower Nosewheel to the Runway
AIR BRAKE..OPEN
Wheel Brakes...As required
Thrust Reversers..As required

NOTE: Landing distance will increase approximately 10% above the landing distance with FLAPS 45 °.

LANDING ABOVE WAT LIMIT

Perform normal **APPROACH and LANDING CHECKS** - NORMAL PROCEDURES - Sub-section 4.10.

During the approach

FLAP OVRD ....Select
FLAPS .... 15°
Airspeed .... V_{REF} +25 KIAS

When landing is assured

FLAPS .... 25°
Airspeed .... V_{REF} +5 KIAS

After touchdown

AIR BRAKE .... OPEN, immediately after touchdown.
Wheel brakes... As required
Thrust reversers .... As required

NOTES:

1. *If one engine is inoperative and if reverse thrust is used, it is recommended that both thrust reversers be deployed.*

2. *Landing distance will increase by approximately 6% above the landing distance with FLAPS 45 °.*

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THRUST REVERSERS

RUDDER BIAS NOT INHIBITED

REVERSER

On the Ground With Thrust Reverse Selected

Both Thrust Reverse Levers ....Reverse Idle

UNLOCK AND/OR ARM INDICATIONS IN FLIGHT

UNLCK **and/or** **ARM**

Associated THRUST REVERSER
POWER switch... OFF

AUTOSTOW

UNLCK **ARM** **In Flight** **REVERSER**

Associated THRUST REVERSER
POWER switch... OFF

If Abnormal Indications Persist

Select engine to idle and land at the nearest suitable airport.

If Abnormal Indications Extinguish

Engine may be used as required.

REVERSE INDICATION IN FLIGHT

REVRS

If REVRS annunciator is illuminated and/or in-flight deployment of thrust reverser is suspected or confirmed, refer to **LANDING WITH ONE THRUST REVERSER DEPLOYED** procedure - this section.

LANDING WITH ONE THRUST REVERSER DEPLOYED

Final Approach

Airspeed..150 KIAS maximum
Landing Gear ....Down
FLAP OVRD ....Select
FLAPS...Up
Rudder Trim ....Neutral position prior to touchdown

At Landing Threshold

Airspeed..V_{REF} +15 KIAS

After Touchdown

Airbrakes...OPEN - Lift Dump not available
Wheel Brakes..As required
Thrust Reverser (operating engine) ....Deploy
Reverse Thrust (operating engine) ....As required

NOTE: Landing Distance will increase by approximately 24% above the landing distance with FLAPS 45 °.

FUEL

FUEL LOW LEVEL

When the fuel contents of either wing tank are reduced to less than 320 lb (150 kg), set the WING FUEL/X-FEED/TRANSFER lever to X-FEED.

A fuel quantity of at least 400 lb (180 kg) is required to complete a go-around and subsequent traffic pattern and landing. If fuel contents are reduced to below 400 lb (180 kg), a go-around should not be attempted.

FUEL LOW PRESSURE

FUEL 1 LO PRESS or **FUEL 2 LO PRESS** and **FUEL ↑**

Fuel pump (affected engine)	Check ON
WING FUEL/X-FEED/TRANSFER lever	X-FEED
FUEL LO PRESS annunciator	Check extinguished
Fuel pump (affected engine)	OFF

Proceed as appropriate:

If Ventral Tank Not Empty

Use AUX FUEL TRANSFER lever selectively to maintain wing fuel balance within 500 lb (227 kg).

If Ventral Tank Empty

Select WING FUEL/X-FEED/TRANSFER lever alternately to X-FEED and TRANSFER to keep wing fuel balance within 500 lb (227 kg).

Prior to landing:

WING FUEL/X-FEED/TRANSFER lever	WING FUEL

AUXILIARY FUEL TRANSFER FAILURE

AUX FUEL TFR and **FUEL ↑**

VENTRAL TANK indicator does not change from FULL within two minutes of selecting the AUX FUEL TRANSFER lever to the down position.

Wing FUEL contents ....Check

Proceed as appropriate:

If Wing Contents Increasing

Continue flight.

Leave the AUX FUEL TRANSFER lever in the down position for 20 minutes, plus an additional 5 minutes in cruise.

If Wing Contents Decreasing

Continued flight is permitted, but land before the airplane weight goes below 22,500 lbs.

NOTE: Overweight landing procedure and inspection required for any landing with fuel in the ventral tank, complete **OVERWEIGHT LANDING** *procedure, this section.*

ENGINE FUEL MALFUNCTION

ENG 1 FUEL or **ENG 2 FUEL** and **FUEL ↑**

Thrust lever (affected engine)....................................Reduce power until the warning is cancelled, or to idle.

If warning persists and is accompanied by engine malfunction, complete **ENGINE SHUTDOWN or FAILURE IN FLIGHT** procedure - EMERGENCY PROCEDURES - Section 3.

NOTE: The malfunction indicates either fuel filter blocked or fuel overheat.

AIR CONDITIONING & PRESSURIZATION

DUCT OVERHEAT

CABIN TEMP (if installed)	CPIT
CABIN TEMP selector	Manual - Hold full COOL

NOTE: Temperature changes in MANUAL mode should be made by short applications of the control. Allow sufficient time for each change to take effect.

If Warning Persists

CABIN TEMP selector	AUTO - Full COOL

If Warning Persists

MAIN AIR VLVs 1 & 2	LP ON

Wait 2 Minutes - If Warning Persists

No. 2 Engine	Increase power to a high setting
MAIN AIR VLVs 1 & 2	CLOSE
F/DK VLV	OPEN fully

Any Time Warning Ceases

CABIN TEMP selector	Use in current mode

NOTE: With the F/DK VLV open, the hot bleed air can maintain a cabin altitude of approximately 9000 ft at 40,000 ft airplane altitude, assuming no abnormal leaks in the cabin. The temperature in the flight compartment and cabin will become very hot.

AUTOMATIC TEMPERATURE CONTROL FAILURE

CABIN TEMP (if installed)	CPIT
CABIN TEMP selector	Manual - Select COOL or HOT as required.

NOTE: Temperature changes in MANUAL mode should be made by short applications of the control. Allow sufficient time for each change to take effect.

If the MANUAL Temperature Control is Not Effective, Proceed as Follows

(a) If the Temperature is Too Low

MAIN AIR VLV No. 2	LP ON
F/DK VLV	OPEN as required

(b) If the Temperature is Too High

MAIN AIR VLVs 1 & 2	LP ON

FLIGHT DECK HEAT VALVE STUCK OPEN

Air Conditioning Noise and Warm Incoming Air with F/DK VLV Selected CLOSE

F/DECK AIR VLV circuit breaker................................Check (DA-D, E2)
F/DK VLV ....OPEN then CLOSE

If Flight Deck Valve Remains Open

MAIN AIR VLV 2..LP ON

MAIN AIR VALVE NOT IN SELECTED POSITION

MAIN AIR VALVE 1 or **MAIN AIR VALVE 2**

Airplane In Flight

MAIN AIR VLV circuit breaker (affected side).............Check (DA-D, E1 & F1)
MAIN AIR VLV (affected side) ....CLOSE then OPEN

If Warning Recurs -

MAIN AIR VLV (affected side) ....CLOSE

Airplane On Ground

Annunciator will illuminate whenever the MAIN AIR VLV is OPEN.

FAILURE TO PRESSURIZE

DUMP VALVE...Check SHUT

If DUMP VALVE was found to be open

Wait for approximately 1 minute to make sure pressurization is operable.

If DUMP VALVE was found to be closed

PRESSN switch..OVRD

If pressurization remains inoperative

Altitude ....Remain below 15,000 ft but not below the minimum safe altitude.

If pressurization is regained

Continue flight at pilot's discretion.

ELECTRICAL

SINGLE GENERATOR FAILURE

GEN 1 FAIL or **GEN 2 FAIL** and **ELECT ↑**

Failed GEN	TRIP
BUS TIE (if open)	CLOSE
GEN AMPS (operative unit)	Check - If above limit (300 AMPS), reduce non-essential loads.

NOTE: It is recommended that no attempt be made to reinstate a failed generator. If flight conditions dictate, only one attempt to reinstate may be accomplished by the following procedure:

BUS TIE	OPEN
Applicable GEN switch	CLOSE and hold for 5 seconds

If This is Unsuccessful

GEN	TRIP
BUS TIE	CLOSE

BUS TIE OPEN

BUS TIE OPEN and **ELECT ↑**

If Voltage High (above 29.5) or Low (below 24.5)

DC VOLTS	Check PS 1 and PS 2 - Identify affected generator.
GEN (abnormal side)	TRIP
BUS TIE	CLOSE
GEN AMPS (operative unit)	Check - If above limit (300 AMPS), reduce non-essential loads.

GENERATORS OUT OF BALANCE

IF GENERATORS DIFFER BY MORE THAN 40 AMPS

BUS TIE .... OPEN

GEN 1 and
GEN 2 AMPS .... Check each less than limit (300 AMPS).

PS 1 and PS 2 volts ...... Check each within 24.5 to 29.5 volts.

IF CURRENTS AND VOLTAGES ARE NORMAL

BUS TIE........................ CLOSE

IF AN ABNORMALITY IS OBSERVED

ONE GENERATOR CURRENT IS ABOVE LIMIT (300 AMPS)

Shed non-essential loads on the abnormal side.

If the current cannot be reduced below the limit:

GEN (affected side)........................... TRIP

Fuel pump (affected side) .... EMERG

NOTE: Do not CLOSE the BUS TIE

ONE BUSBAR VOLTAGE IS NOT BETWEEN 24.5 TO 29.5 VOLTS

GEN (affected side) .... TRIP

BUS TIE.................................... CLOSE

BATTERY CONTACTOR

BATT 1 CNTCTR or **BATT 2 CNTCTR** and **ELECT ↑**

No In-Flight Action

Illumination indicates the applicable battery is no longer charging or the Emergency Contactor has opened.

XS 1 or XS 2 FAIL

XS 1 FAIL	**or**	**XS 2 FAIL**	**and**	**ELECT ↑**

By use of the AC voltmeter, establish whether supplies are available on the affected busbar.

Proceed as appropriate:

If Supplies Not Available

If failure is in conjunction with an associated inverter failure, one attempt to reset the inverter may be made:

Inverter (affected side)... STOP momentarily, then START

If inverter resets and the AC bus is restored, flight can be continued.

If inverter does not reset:

Inverter (affected side)... STOP

Continue flight at the pilot's discretion without the associated AC bus.

If failure is not in conjunction with an associated inverter failure:

No further action. Continue flight at the pilot's discretion without the associated AC bus.

If Supplies Available

No further action. Continue flight at the pilot's discretion.

NOTES:

1. *Loss of XS 1 will result in the loss of Stall IDENT 1 (*refer to ***STALL WARNING & IDENTIFICATION*** procedures - *this Sub-section), AOA Indicator, AOA Indexer Lights, Mach Trim* (refer to **MACH TRIM FAIL** procedures - *this Sub-section) and Autopilot Pitch Trim.*

2. *Loss of XS 2 will result in the loss of Stall IDENT 2 (*refer to ***STALL WARNING & IDENTIFICATION*** procedures - *this Sub-section), Ice Detector and Cabin Pressurization Fan Venturi. Avoid flight in icing conditions. Do not introduce pressurization air on the ground from either the APU (if installed) or the Main Air Valves.*

SINGLE INVERTER FAILURE

INV 1 FAIL	or	**INV 2 FAIL**	and	**ELECT ↑**

All AC systems are available

Do Not Attempt To Reset If INV 1 FAIL or INV 2 FAIL Annunciators Illuminate.

DOUBLE INVERTER FAILURE

XS 1 FAIL		**XS 2 FAIL**	and	**ELECT ↑**
INV 1 FAIL	**STBY INV ON**	**INV 2 FAIL**		

If Both INV 1 FAIL and INV 2 FAIL Annunciators Illuminate, A Reset of One Inverter May Be Attempted If The Flight Condition Dictates.

Refer to **XS 1 or XS 2 FAIL** procedure - this section, for inoperative components.

MWS DIMMER FAIL

**MWS
DIM
FAIL**

MWS NORM/DIM OVRD switch................................DIM OVRD

FLIGHT CONTROLS

OUT OF TRIM INDICATION

ELEV/AIL TRIM

If On Takeoff and Below 80 KIAS

Thrust levers	Close
Brakes	Apply
AIR BRAKES	As required
Thrust reversers	As required

MACH TRIM FAIL

MACH TRIM FAIL

Restrict speed to Mach 0.73 or less unless autopilot is engaged.

RUDDER BIAS MALFUNCTION

Rudder bias gives unwanted rudder deflection when both engines are operating normally at the same N_2.

If Failure Occurs During Takeoff, Prior to V_1

Thrust levers	Close
Brakes	Apply
AIR BRAKES	As required
Thrust reversers	As required

If Failure Occurs in Flight

RUDDER BIAS (A/B)	OFF
RUDDER BIAS (A/B)	ON - In turn to identify faulty system
RUDDER BIAS (faulty system)	OFF

LANDING WITH ASYMMETRIC AIR BRAKE

If an airbrake asymmetric condition occurs, land with flaps retracted. Refer to the **FLAPS UP or 15° APPROACH and LANDING** procedure - OPERATIONS, this Sub-section.

LANDING BY USE OF TRIM SYSTEM

Perform **Normal APPROACH and LANDING CHECKS** -
NORMAL PROCEDURES - Sub-section 4.10.

NOTES:

1. *Steep turns should be avoided.*
2. *Attempt to utilize a runway that will result in as small a crosswind component as possible.*

FLAPS..15°
Landing Gear ....Down
Airspeed..160 KIAS

If Rudder is Unusable

FLAPS..45°
Airspeed..V_{REF} +10 KIAS
Yaw Damper...Disengage prior to touchdown

NOTE: Landing Distance will increase by approximately 16% above the landing distance with FLAPS 45 °.

If Elevator is Unusable

Use pitch trim to control the airplane longitudinally

FLAPS..45°
Airspeed..V_{REF} +10 KIAS
Descent rate...Control with engine thrust
Approach...Fly a flat, straight-in approach
Thrust levers..Slowly reduce to idle at touchdown

Touch down using pitch trim to produce the minimum flare required.

NOTE: Landing distance will increase by approximately 16% above the landing distance with FLAPS 45 °.

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LANDING BY USE OF TRIM SYSTEM (continued)

Rudder and Elevator Unusable in Conjunction with an Engine Failure

FLAP OVRD .... Select
FLAPS .... 25°
Airspeed .... V_{REF} +20 KIAS

Maintain this configuration and speed until touchdown.

NOTES:

1. *Landing distance will increase by approximately 29% above the landing distance with FLAPS 45°.*
2. *Lift dump is inoperative with FLAPS at 25°.*

Aileron Unusable

Aileron trim and rudder should be used for lateral control.

FLAP OVRD .... Select
FLAPS .... Up

WARNING: A GREATER AIRSPEED MAY BE REQUIRED TO RETAIN LATERAL CONTROL.

Airspeed .... V_{REF} +25 KIAS, minimum

NOTES:

1. *Landing distance will increase by approximately 43% above the landing distance with FLAPS 45°.*
2. *Lift dump is inoperative with FLAPS UP.*

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STALL WARNING & IDENTIFICATION

STALL IDENTIFICATION

Operation of the STALL WARNING (stick shake) or STALL IDENTIFICATION (stick push) must be accepted as indicative of a stall. Proceed with normal stall recovery actions.

If Stick Shake Persists

STALL WARN MOTOR L and R
Circuit breakers.. Pull (DA-D - B6 & B7)

If Stick Push Persists

STALL IDENT switches 1 and 2................................ Push both together - System is now inhibited.

NOTE: *With stall identification system inhibited or stall warning system disabled, normal stall protection is not available. Continue flight with caution.*

STALL IDENTIFICATION SYSTEM

Pilot and Copilot Panel

IDENT # **and** **STALL IDENT**

Relevant STALL IDENT switch .... Push - Relevant INHIB annunciator illuminates.

Airplanes equipped with a 2 channel Stall Warning & Identification System:

With stall identification system inhibited or stall warning system disabled, normal stall protection is not available. Continue flight with caution.

Airplanes equipped with a 3 channel Stall Warning & Identification System:

Remaining channels of stall identification system will continue to provide stick pusher stall protection.

STALL IDENTIFICATION COMPONENT MALFUNCTIONS

Pilot Panel	Copilot Panel		
SSU **FLAP**	**SQUAT**	**and**	**STALL IDENT**

SSU - Indicates a failure of one or both of the Signal Summing Units. Stall warning and identification may not operate. Continue flight with caution.

FLAP - Indicates a flap asymmetry has been detected. Complete either the **FLAPS UP or 15° APPROACH and LANDING** or **FLAPS 25° APPROACH and LANDING** procedure - this Sub-section, OPERATIONS if applicable.

SQUAT - Indicates a landing gear weight on wheels switch asymmetry between the left and right sensors.

If Indication Occurs During Taxi

PITOT/VANE HEAT L & R ....OFF

SCREEN HEAT L & R ....OFF

MAIN AIR VLVs 1 & 2...CLOSE

APU BLEED AIR (if installed)....................................OFF

Thrust Reversers may not function.

The fault must be corrected before flight.

If Indication Occurs In-Flight

ICE DET ....OVRD

PRESSN ....OVRD

THRUST REVERSERS..OFF

Avoid flight in icing conditions as the following systems may not function:

- Left and Right "A" Windscreen Heat
- Left and Right Static Plate Heat
- Left and Right Pitot Heat

Stall Identification and Stall Warning may not be available. Continue flight with caution.

The Landing Gear Handle may not be movable from the down position unless the GEAR OVRD button is pushed.

MAIN HYDRAULIC FAILURE

HYD 1 LO PRESS and **HYD 2 LO PRESS**

If Hydraulic Supply Pressure Reduces to Approximately 2300 PSI or Below

Refer to the **Lowering of LANDING GEAR and FLAPS** procedure below:

> *NOTE: 35,000 ft is the maximum altitude from which an emergency descent can be accomplished within the 4 minute criteria as specified in 14 CFR Part 135, without the use of airbrakes.*

Altitude	35,000 ft or below

Use of the Auxiliary Hydraulic System will be necessary to lower the LANDING GEAR and FLAPS.

If EMRG BRK LO PRESS Annunciator is Illuminated -
Refer to **EMERGENCY BRAKE LOW PRESSURE** procedure - this Sub-section.

> *NOTE: Thrust reversers should be available for one deploy and one stow operation.*

Lowering of LANDING GEAR and FLAPS

AUX HYD SYSTEM PULL handle	Pull - Do not reset
Hand pump	Operate until gear locks down

CAUTION: WHEN OPERATING THE AUXILIARY HYDRAULIC SYSTEM TO LOWER THE LANDING GEAR, THE HAND PUMP ACTION MUST BE CONTINUED, AFTER 3 GREENS ARE ACHIEVED, UNTIL POSITIVE RESISTANCE IS FELT TO MAKE SURE THE LANDING GEAR IS DOWN AND LOCKED.

LANDING GEAR lever	Select down
FLAP selector	When required - set to desired position.
Hand pump	Operate until desired position is achieved.

NOTES:

1. *The Air Brake, Lift Dump and Nosewheel Steering will all be inoperative.*
2. *If normal brakes with anti-skid are available, landing distance will increase by approximately 24% above the landing distance with FLAPS 45°.*

Continued Next Page →

MAIN HYDRAULIC FAILURE (continued)

Wheelbrake Operation

Before Landing

WHEEL BRAKE lever	If SUPPLY pressure is approximately 2300 PSI, leave in NORMAL (forward) position. If SUPPLY pressure is zero, select EMERGY.
Brake pedals	Avoid use before landing

Actions On Landing

Brake pedals	Apply gently - Use one continuous application if possible - Do not taxi.

If Normal Braking Fails

Complete **BRAKE FAILURE** procedure - EMERGENCY PROCEDURES - Section 3.

NOTE: Anti-skid will be inoperative.

EMERGENCY BRAKE LOW PRESSURE

MAIN HYDRAULIC FAILURE and **EMRG BRK LO PRESS**

Emergency brake system probably inoperative. On landing, use normal braking sparingly to conserve remaining pressure.

HYDRAULIC LOW PRESSURE

HYD 1 LO PRESS **or** **HYD 2 LO PRESS**

No in-flight action.

HYDRAULIC SYSTEM OVERHEAT

**HYD
OVHT**

During Taxi (High Ambient Temperatures)

Cycle the flaps twice over the operating range. If warning extinguishes, continue taxi. If warning remains illuminated, have fault corrected before flight.

During Flight

No in-flight action.

HYDRAULIC AUXILIARY SYSTEM LOW FLUID LEVEL

**AUX HYD
LO LEVEL**

AUX HYD LO LEVEL annunciator is illuminated whenever the auxiliary system is used.

If this annunciator illuminates without using the auxiliary system, it indicates insufficient hydraulic fluid may exist for extension of the gear and flaps while using the auxiliary system.

Intentionally left blank

LANDING GEAR

LANDING GEAR DOES NOT RETRACT

NOTE: Observe the V_{LO}/V_{LE} of 220 KIAS and the altitude limit of 20,000 ft.

AUX HYD SYSTEM hand pump	Check socket fully down
AUX HYD SYSTEM PULL handle	Set in

If Gear Fails To Retract

LANDING GEAR lever	Select Down
Weight	If necessary, reduce and land

LANDING GEAR LEVER CANNOT BE MOVED

If Retraction Is Essential

GEAR OVRD button	Push
LANDING GEAR lever	Select UP (action together)

Intentionally left blank

ICE PROTECTION

ENGINE ANTICE

ENG 1 A/ICE and/or **ENG 2 A/ICE**

Thrust lever (affected engine) ....Gradually increase in small increments.

If annunciator remains illuminated

Avoid icing conditions if possible.

ANTICE LOW QUANTITY

ANTICE LO QTY and **ICE PROT ↑**

Monitor antice fluid quantity.

Approximately 30 minutes operation of the airframe antice system is available when the warning illuminates.

ANTICE LOW PRESSURE

ANTICE LO PRESS and **ICE PROT ↑**

Avoid icing conditions. Airframe ice protection system has failed.

AIRFRAME ICE PROTECTION SYSTEM MALFUNCTIONS

If a malfunction is apparent or suspected during flight, proceed as follows

- Leave icing conditions as soon as possible.
- Before starting the landing approach, observe the wing leading edge to determine if ice is present.

(a) If ice is present and atmospheric conditions permit, attempt to shed residual ice accumulations prior to landing.

(b) If ice cannot be shed, make a no flap landing.
Refer to **FLAPS UP or 15° APPROACH and LANDING** procedure - OPERATIONS, this Sub-section.

(c) If ice is not present, make a normal landing.

PITOT HEATER FAILURE

L PITOT HTR FAIL or **R PITOT HTR FAIL** and **ICE PROT ↑**

PITOT HEAT circuit breaker (affected side)	Check (DA-D, E4 & E5)
PITOT/VANE HEAT (affected side)	Check - ON
PITOT AMPS	Check left and right AMPS to identify and verify failed heater (current below 6 AMPs).
Associated instruments	Monitor

Avoid flight in icing conditions.

Prior to entering an area of known or suspected icing or if altitude/airspeed discrepancies occur:

WARNING: AUTOPILOT PERFORMANCE MAY BE ADVERSELY AFFECTED.

AP & YD	Couple to non-affected side
ADC (affected side)	REV

The following equipment may fail to operate satisfactorily:

L PITOT HTR FAIL: Left air data computer and associated displays, overspeed warnings, 150 KIAS gear warning horn.

R PITOT HTR FAIL: Right air data computer and associated displays, overspeed warnings, 150 KIAS gear warning horn and ESIS airspeed.

NOTE: The fault must be corrected before next flight.

VANE HEATER FAILURE

L VANE HTR FAIL or **R VANE HTR FAIL** and **ICE PROT ↑**

Avoid flight in icing conditions.

NOTES:

1. *Accumulation of ice on the stall vanes may cause an intermittent stick shake.*
2. *The fault must be corrected before next flight.*

TEMPORARY CHANGE

P/N 140-590032-0005TC20

PUBLICATION AFFECTED: FAA Approved Airplane Flight Manual, P/N 140-590032-0005, Dated Nov 30, 2001, or latest revision for Hawker 800XP airplanes equipped with Pro Line 21 avionics.

AIRPLANE EFFECTIVITY: All Hawker 800XP Pro Line 21 airplanes.

DESCRIPTION OF CHANGE: Revision of existing SIDESCREEN OVERHEAT text and addition of instructions for SIDE SCRN OVHT warning recurrence.

FILING INSTRUCTIONS: Insert Temporary Change 20 Page 2 of 2 to face Page 41 in Section 4, Sub-section 4.05 - ABNORMAL PROCEDURES.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

ICE PROTECTION

SIDESCREEN OVERHEAT

Refer to Page 2 of 2.

Approved by: Larry Moroschini for
Randolph Shields, ODA Lead administrator
Beechcraft Corporation
ODA-230339-CE

Approval Date: 11/11/2013

TEMPORARY CHANGE

P/N 140-590032-0005TC20

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

ICE PROTECTION

SIDESCREEN OVERHEAT

SIDE SCRN OVHT and **ICE PROT ↑**

Left and Right SCREEN HEAT switches....................OFF then ON, one at a time to identify the overheating screen.

NOTE: Left SCREEN HEAT switch controls LH Windscreen + RH Sidescreen.
Right SCREEN HEAT switch controls RH Windscreen + LH Sidescreen.

The warning will extinguish when the switch is turned OFF, but may recur either immediately or subsequently when the switch is turned ON.

Leave the switch ON and continue in that condition, if necessary. The relevant screen will be controlled at a higher temperature than normal.

Refer also to WINDSCREEN DAMAGE procedure.

WINDSCREEN OVERHEAT

L SCREEN OVHT and/or **R SCREEN OVHT** and **ICE PROT ↑**

SCREEN HEAT switch (affected side)....................... OFF then ON

The warning will extinguish when the switch is turned OFF, but may recur either immediately or subsequently when the switch is turned ON.

Leave the switch ON and continue in that condition if necessary. The relevant screen will be controlled at a higher temperature than normal.

SIDESCREEN OVERHEAT

SIDE SCRN OVHT and **ICE PROT ↑**

Left and Right SCREEN HEAT switches .... OFF then ON, one at a time to identify the overheating screen.

NOTE: Left SCREEN HEAT switch controls LH Windscreen + RH Sidescreen.
Right SCREEN HEAT switch controls RH Windscreen + LH Sidescreen.

If Any of the SCREEN OVHT or SIDE SCRN OVHT Warnings Persist or Are Repeated, Leave the Relevant Switch in the ON Position.

WINDSCREEN DAMAGE

Cracks or other visible damage

SCREEN HEAT (affected side)................................. OFF

Avoid flight in icing conditions.

ALTERNATOR FAILURE

ALTR 1 FAIL or **ALTR 2 FAIL** and **ICE PROT ↑**

ALTERNATOR (affected side) ....OFF then ON

Warning Persists:

ALTERNATOR (affected side)...............................OFF

NOTE: Both windscreens (A panels) will remain heated but both sidescreens (B panels) will be unheated.

Warning Cancels:

No further action.

AVIONICS

AFD FAILURE

In the event of any failures, the airplane should be flown by the pilot who has the fully operational system, or the better system in the case of multiple failures.

Display reversion switch .... Select operative display

If all displays fail

Use Electronic Standby Instrument System.

AVIONICS SYSTEMS

When Flying In RVSM Airspace

Failure of components or systems that may affect flight in RVSM airspace should be handled by the following:

(a) Refer to the applicable procedures for the failed components or systems in this Sub-section.

(b) Utilize the specific contingency procedures applicable to individual ICAO RVSM regions.

Single ADC Failure

ADC circuit breakers .... Check
(DA-A - E16, E17, F16 or F17)

ADC reversion switch .... Select operative ADC

- Mach trim will be inoperative.
- The autopilot will revert to and continue to function in basic roll/pitch modes.
- ADC comparators will be inoperative.

Dual ADC Failure

ADC circuit breakers .... Check
(DA-A - E16, E17, F16 or F17)

Use Electronic Standby Instrument System and land at the nearest suitable airport.

- TCAS will be inoperative.
- Transponder Mode C will be inoperative.
- Autopilot and Yaw Damper will be inoperative.

Continued Next Page ⟶

AVIONICS SYSTEMS (continued)

Single AHRS Failure

AHRS circuit breakers .... Check (DA-A - E18, E19, F18 or F19)

AHS reversion switch .... Select operative AHRS

- The autopilot and yaw damper will disconnect and will no longer function.
- TCAS is functional, but relative bearing to the displayed targets may not be accurate.
- Weather radar stabilization will be inoperative.
- AHRS comparators will be inoperative.

Dual AHRS Failure

AHRS circuit breakers .... Check (DA-A - E18, E19, F18 or F19)

Use Electronic Standby Instrument System and land at the nearest suitable airport.

- The autopilot and yaw damper will disconnect and will no longer function.
- TCAS is functional, but relative bearing to the displayed targets may not be accurate.
- Weather radar stabilization will be inoperative.

Single CDU Failure

CDU circuit breakers .... Check (DA-A - E13, E14 or F13)

CDU reversion switch .... Select operative CDU

Dual CDU Failure

CDU circuit breakers .... Check (DA-A - E13, E14 or F13)

EMERG RADIO .... On (located above DA-A circuit breaker panel).

NOTES:

1. *Only VOR 1 and COMM 1 will be available and frequency tuning must be made using the CTL-23 control.*
2. *The EMERG RADIO switch will only function if PE power is available.*

CVR Failure (CVR FAIL Annunciator Illuminated)

Correct prior to flight or before the next flight if annunciator illuminates during flight.

Continued Next Page ⟶

AVIONICS SYSTEMS (continued)

Single Audio System Failure

Audio switch (affected side) ....EMERG

Audio volume control is provided through the other crewmember's audio panel.

Dual Audio System Failure

No in flight action.

Only Comm 1 audio is available through the headset. The boom microphone must be used as the hand microphone will be inoperative. Aural warnings will be inoperative.

CAT II Malfunctions

Discontinue the CAT II approach when any of the following occur:

- Any comparator illuminates.
- GS, LOC, ATT, FD or HDG flag appears on the PFD.
- Mistrim annunciator.
- Autopilot malfunction/disengagement below 1000 ft Radio Altitude.
- Amber or red CAT II annunciation.

Autopilot Mistrim Annunciation

Illumination of an amber boxed E (Elevator) or A (Aileron) annunciation on the PFDs indicate that the autopilot is flying the airplane in a mistrimmed condition. If the mistrim indication continues for more than a few seconds:

NOTE: Intentional or automatic stick-free disengagement of the autopilot into an annunciated amber elevator mistrim indication will produce a significant airplane response in the direction of the mistrim force.

If a continuous mistrim indication is presented, the pilot should brace the flight controls and disconnect the autopilot. Upon disconnect, the pilot will experience a force of between 15 and 20 pounds.

Re-engagement of the autopilot should not be attempted until the reason for the out of trim state has been isolated and corrected, and the airplane has been returned to a trimmed condition.

Flight controls ....Hold firmly
AP...Disengage
Retrim airplane if necessary
Fuel balance ....Check and balance as required
AP...As required

Continued Next Page →

AVIONICS SYSTEMS (continued)

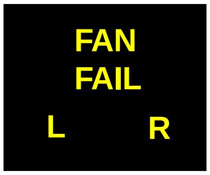
Radio Equipment Failure

If power failure to individual radio system components is observed or suspected, power may be regained by operation of the PE, PS 1 and/or PS 2 Avionics Master Bypass switches, located on the DA-A circuit breaker panel, behind the copilot.

Each Bypass switch controls the following:

PE Bypass Switch	*PS1 Bypass Switch*	*PS2 Bypass Switch*
ADF 1	EGPWS	Audio 2
Audio 1	HF 1	DME 2
CTL-23	PA System	GPS 2
DME 1	Radar	Transponder 2
VHF 1	Radio Altimeter	VHF 2
VOR 1	SELCAL	VOR 2
Transponder 1	TCAS	

Fan Failure



Illumination indicates failure of the relevant fan providing cooling air to the pilot's and/or copilot's PFD, MFD and controllers.

During Taxi

Cockpit Blower circuit breakers ....Check (DA-D - P4, or P5)
Failure must be corrected prior to flight.

During Flight

Cockpit Blower circuit breakers ....Check (DA-D - P4, or P5)

COMPARATORS

Miscompare Annunciators

Miscompare annunciators are displayed on the PFD to alert the pilots that redundant data from dual systems is not agreeing within limits. Attitude, heading, altitude and airspeed data are monitored full time. Full time comparators are provided for engine N_1, N_2 and ITT.

Miscompare annunciators are displayed in yellow, flash for 5 seconds initially and then remain illuminated. The annunciators will extinguish when the miscompare condition is removed.

Two independent sources are required for each comparator function and the comparators are disabled if ADC or AHS reversion is selected or either side has failed.

If miscompare annunciations are observed, the crew should attempt to ascertain which system/ component is erroneous. Use of the Electronic Standby Instrument System may assist this process. The applicable reversionary mode for ADC or AHS will provide cross-side data for display. No reversionary capability for engine miscompares is available.

HDG

This annunciation indicates a mismatch between the pilot's and copilot's displayed heading data.

Establish airplane in straight and level, unaccelerated flight.

Compare indications with the Electronic Standby Instrument System.

Determine if pilot's or copilot's heading display is in error.

Relevant AHS Transfer switch...................................REV

PIT or **ROL** or **ATT**

This annunciation indicates a mismatch between the pilot's and copilot's displayed attitude data.

Establish airplane in straight and level, unaccelerated flight.

Compare indications with the Electronic Standby Instrument System.

Determine if pilot's or copilot's attitude display is in error.

Relevant AHS Transfer switch...................................REV

ALT or **IAS**

This annunciation indicates a mismatch between the pilot's and copilot's displayed air data.

Establish airplane in straight and level, unaccelerated flight.

Compare indications with the Electronic Standby Instrument System.

Determine if pilot's or copilot's air data display is in error.

Relevant ADC Transfer switch...................................REV

Continued Next Page ⟶

COMPARATORS (continued)

LOC

This annunciation indicates a mismatch between the pilot's and copilot's displayed localizer data.

Determine correct NAV source and select as necessary.
If unable to determine the correct source, proceed visually if able or execute a missed approach.

GS

This annunciation indicates a mismatch between the pilot's and copilot's displayed glideslope data.

Determine correct NAV source and select as necessary.
If unable to determine the correct source, proceed visually if able and either descend to localizer only minimums or execute a missed approach.

FD

This annunciation indicates a mismatch between the pilot's and copilot's flight director data.

AP & YD ....Disengage

Continue the approach without use of the flight director if able. Otherwise:

Execute a missed approach.

N_1 or N_2 or ITT

This annunciation indicates a mismatch between the independent sources of engine data.

Thrust ....If flight conditions permit, reduce as required to maintain engine within limits.

Use the DCP ENGINE button to cycle the displayed engine data between the sources to aid in determining the erroneous source.

VSPD

This annunciation indicates a mismatch between the FMS-generated V_{SPEEDS} posted to the pilot's and copilot's PFD.

Determine the cause for the miscompare and correct. If unable to determine the cause, manually post V_{SPEEDS} to the PFD.

Continued Next Page ⟶

COMPARATORS (continued)

No Compare Annunciators

No Compare annunciators are displayed on the PFD when compared parameters are valid, but no valid data is being received from a second source allowing the comparators to function.

No Compare annunciators are displayed in white, flash for 5 seconds initially and then remain illuminated. They are extinguished when the No Compare condition is removed.

No in-flight action is required.

Comparator Function	*No Compare Annunciations*
Heading	XAHS
Pitch	XAHS
Roll	XAHS
Pitch and Roll	XAHS
Altitude	XADC
Airspeed	XADC
Left N_1 or N_2 or ITT	ENG 1
Right N_1 or N_2 or ITT	ENG 2

Crosstalk Fail

A yellow boxed XTLK flag appears above the location of the ATT and IAS comparator flags on the PFD, and equivalent MFD location when applicable, when any flight display loses crosstalk input from any other PFD or MFD. The yellow boxed XTLK will be removed when communication is restored.

Displays that have been deselected by pilot reversion will not cause the yellow boxed XTLK flag to come into view.

EGPWS CAUTION

(GND PROX CAUTION ANNUNCIATION and/or ACTIVATION OF SINK RATE, or DON'T SINK, or TOO LOW FLAPS, or TOO LOW GEAR, or TOO LOW TERRAIN, or GLIDESLOPE, or CAUTION, TERRAIN or CAUTION, OBSTACLE AURAL ALERT)

SINK RATE	Monitor terrain clearance visually or with terrain display and reduce sink rate as necessary.
DON'T SINK	Correct sink rate and continue take-off climb as required.
TOO LOW, GEAR	Extend landing gear or execute a go-around.
TOO LOW, FLAPS	Extend flaps or execute a go-around or select FLAP OVRD for an abnormal configuration landing.
TOO LOW, TERRAIN or CAUTION, TERRAIN or CAUTION, OBSTACLE	Monitor terrain or obstacle clearance visually or with terrain display and reduce or stop sink rate or climb as necessary.
GLIDESLOPE	Correct flight path back to glideslope centerline or select GS INHIB.

WINDSHEAR CAUTION

(WINDSHEAR CAUTION ANNUNCIATION and/or ACTIVATION OF WINDSHEAR AURAL ALERT)

TAKE OFF	Verify take-off thrust is set and maintain take-off path attitude.
APPROACH	Consider a go-around. If approach is continued, closely monitor airspeed and glidepath and avoid prolonged thrust reduction.

EGPWS MODE FAILURE

(GPWS, WS or TERR) OR TERRAIN FAIL MESSAGE

GPWS	One or more of the basic GPWS modes (1-6) are inoperative and some or all of the aural alerts and visual warnings and cautions may not be provided.
WS	Windshear GPWS mode (7) is inoperative and associated aural alerts and visual warnings and cautions may not be provided.
TERR	Enhanced EGPWS TAD and/or TCF mode is inoperative and associated aural alerts and visual warnings and cautions may not be provided.
TERRAIN FAIL	Terrain display on MFD is inoperative.

GPS-FMS DISAGREE OR GPS NOT AVAILABLE FMS MESSAGE

TERR INHIB .... Select

TCAS FAIL (PFD) or TCAS OFF (PFD) or TD FAIL (MFD)

TCAS circuit breaker .... Check (DA-A, E8)

TCAS data is not being properly received by the PFD or MFD, or TCAS is selected OFF and the TCAS display is enabled. Correct the failed item or select TCAS on.

MISCELLANEOUS

ENTRY DOOR UNLOCKED

**ENT DOOR
UNLOCKED**

WARNING: DO NOT ATTEMPT TO CHECK THE SECURITY OF THE CABIN ENTRY DOOR DURING FLIGHT. REMAIN AS FAR FROM THE DOOR AS POSSIBLE WITH SEAT BELTS SECURELY FASTENED.

Make sure all occupants have seat belts fastened and remain clear of the door.

Cabin notices	ON
Cabin differential pressure	Reduce to lowest practical value (zero preferred) by descending and/or selecting higher cabin altitude setting (not to exceed 9000 ft).
Oxygen (crew & passenger)	As required
Mic selector	OXY-MIC (if required)

Land at the nearest suitable airport.

REAR BAY DOOR

**REAR BAY
DOOR**

In Flight - No action

On Ground - Check Rear Bay Door, Refueling Door and Toilet Service Door (if installed)

EMERGENCY LIGHTS NOT SELECTED (if installed)

**EMRG LTS
NOT SLCT**

EMERG lights	ARM

SUB-SECTION 4.10

NORMAL PROCEDURES

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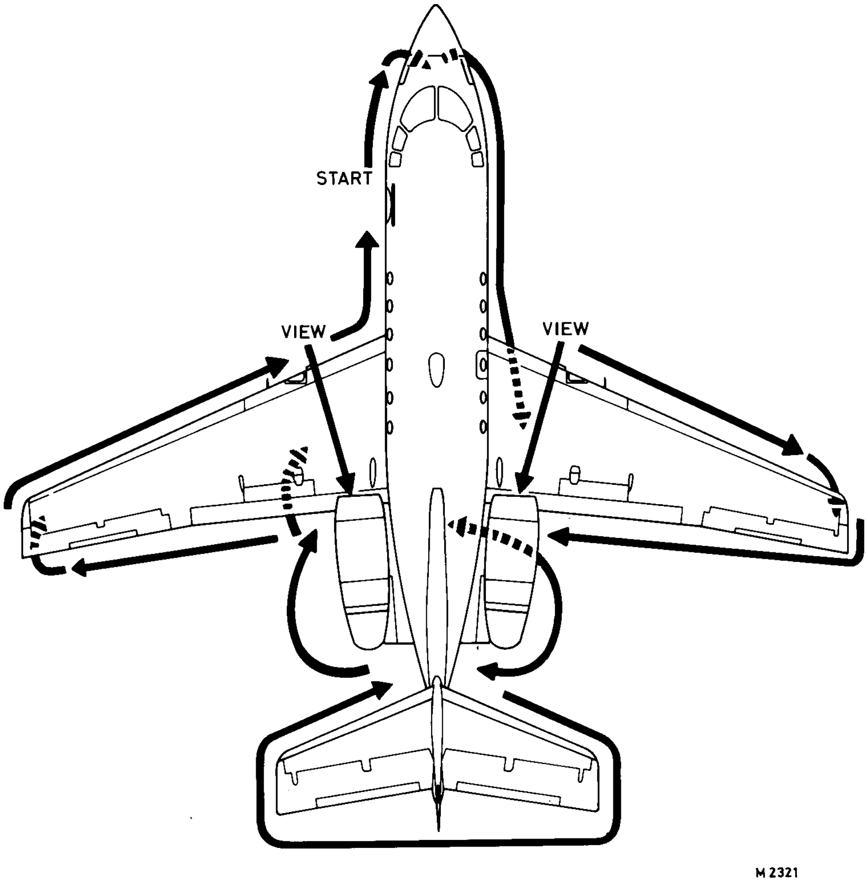
RECOMMENDED WALK-AROUND PATTERN



NOTE: Dashed lines indicate check areas underneath the airplane.

Figure 4.10.1

TEMPORARY CHANGE

P/N 140-590032-0005TC16 (Issue 3)

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005, Dated Nov 30, 2001, or latest revision for Hawker 800XP airplanes equipped with Pro Line 21 avionics.
AIRPLANE SERIAL NUMBERS AFFECTED:	Hawker 800XP 258541, 258556, 258567 and After.
DESCRIPTION OF CHANGE:	Revised Ice Protection Limitations.
FILING INSTRUCTIONS:	Remove and destroy existing Temporary Change 16 (Issue 2) Page 3 of 3 from Section 4 - ABNORMAL/NORMAL PROCEDURES Sub-section 4.10 - NORMAL PROCEDURES Page 3. Insert Temporary Change 16 (Issue 3) Page 4 of 4 in Section 4 - ABNORMAL/NORMAL PROCEDURES Sub-section 4.10 - NORMAL PROCEDURES Page 3.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.10 - NORMAL PROCEDURES

EXTERNAL CHECKS

Read the following procedural check in place of the first procedural check on Page 3:

All surfaces and wing leading edges	Free from snow, ice and frost - see AFM Section 2 - LIMITATIONS.

GROUND HANDLING CHECKLIST

A stand-alone Ground Handling Checklist, containing the Pre-Flight and Post Flight Checks and Procedures, is issued to each airplane replacing the Pre-Flight and Post Flight Inspections in the Airplane Flexible Maintenance Schedule (AFMS). The Pre-Flight Check must be accomplished prior to or concurrent with the External Checks. The Post Flight Checks must be accomplished after the Leaving Airplane (Terminating Flight) Checks following the last flight of the day.

EXTERNAL CHECKS

Assure that all of the requirements listed under PRE-FLIGHT CHECK, (located in Part I of the GROUND HANDLING CHECKLIST) are accomplished.

NOTES:

1. *For flight without certain secondary airframe parts, refer to AFM Section 7 Supplement P/N 140-590032-0021 Configuration Deviation List (CDL).*
2. *If the airframe ice protection system is to be checked, it must be primed for at least 2 minutes prior to the walk-around checks.*

All surfaces	Free from snow, ice and frost - see AFM Section 2 - LIMITATIONS.
Protective covers, blanks and plugs	Remove and stow
Engine, APU (if installed) and CAU	Intake and exhaust ports clear
Landing gear	Extension normal - Check tires brake and hoses.
Landing gear locking pins (3)	Remove
Nose wheel steering pin	Check
Nose gear doors	Closed - Manual release secure
Nose tires	Check condition
Static plates	Free from dents, corrosion and contaminants.
Nose skin (forward of static plates)	Free from dents, paint bubbles and sealant bulges.
Avionics access doors	Correctly seated and secured
Fasteners and panels	All secure - see NOTE 1 above
Thrust reversers	Stowed
Thrust reverser safety pins (2)	Check removed
Engine oil	Check level
Engine nacelles and pylons	Undamaged - Free from oil, fuel, or hydraulic leaks.
Wing and Horizontal Tail	Check antice fluid distributed at panels.

BEFORE START CHECKS

NOTE: Throughout these Normal Procedures where an APU operation is required, refer to the APU Supplement located in Section 7 - SUPPLEMENTS.

Cabin	Check
Cabin overwing emergency exit locking pin	Check removed and stowed
REFUEL switches	All OFF
Circuit breakers	Set
Safety equipment	Check and stow
Pump handle	Stowed

CAUTION: MAKE SURE THE GEAR OVRD BUTTON IS NOT PUSHED.

LANDING GEAR	Selector down - Nose gear indicator visible.
Brakes	PARK
All trims	Check and set
Thrust reverse levers	Stow - POWER OFF
HP COCKS	Close
LP COCKS	Levers up
X-FEED and TRANSFER	Levers up
BATT	ON - Check gear 3 greens
BATT ISOLATE	NORM
BUS TIE OPEN annunciator	Check illuminated

NOTE: Any battery which does not indicate a minimum of 23 volts must be recharged or replaced before flight.

Battery volts	Check all above 23
Fire extinguisher switches	Off (2) Indicators clear (2)

NOTE: If the battery temperature is suspected to be below -10° C, the engines should be dry motored to warm the batteries before attempting a start.

CAUTION: VERIFY N_1 ROTOR ROTATION PRIOR TO PLACING THE *HP COCK* TO *ON*.

CHECK THE OPERATING ANNUNCIATOR EXTINGUISHES AT APPROXIMATELY 45% N_2 RPM.

IF ANY OF THE FOLLOWING CONDITIONS OCCUR, ABORT THE START BY IMMEDIATELY CLOSING THE *HP COCK*, THEN PUSH THE *PWR ON PUSH FOR ABORT* SWITCH:

Continued Next Page →

BEFORE START CHECKS (continued)

Abort Conditions

- **NO LIGHT-OFF WITHIN 10 SECONDS OF OPENING THE *HP COCK*.**
- **ITT RAPIDLY APPROACHES 978° C.**
- **IDLE RPM (APPROXIMATELY 27% N_1 WITH 48-67% N_2) NOT REACHED BY 50 SECONDS AFTER LIGHT-OFF.**
- ***OIL LO PRESS* ANNUNCIATOR NOT EXTINGUISHED BEFORE IDLE RPM.**
- **N_1 OR N_2 STOPS INCREASING BEFORE REACHING IDLE RPM.**

External or APU (if installed) Power	
EXT PWR	As required
EXT BATT CHG	Off
APU (if installed)	Start

Battery Power	
EXT PWR	OFF
TEST Panel	Test ENG FIRE 1 & 2.
BEACON	ON
R PUMP (fuel)	ON
ENG CMPTR 2	AUTO
MAIN AIR VLV 2	CLOSE
START PWR	ON
ENG 2	Push OPERATING.
START PWR	OFF

BUS TIE (if EXT PWR OFF)	CLOSE
STBY INV	ARM - Check XE Volts
Inverters	ON and check
Air conditioning	As required
Electronic Standby Instrument System (ESIS)	On - Remain static for 3 minutes
Radio 1 & 2 Masters	ON
Transponders	Signal from flying pilot's ADC (Changes as flying pilot changes).
PASSENGER SUPPLY Oxygen	ON
OXYGEN	SUPPLY ON - Check contents
LH mask and microphone	Check
CVR	Test
LH side panels	Check

Continued Next Page →

BEFORE START CHECKS (continued)

CABIN HIGH DATUM	As required
EGPWS switches	Deselected
MWS	TEST - DIM OVRD to NORM
AHRS Mode (L & R)	NORM
Transfer switches (L & R)	Extinguished
AUX HYD SYSTEM handle	Fully in
DUMP VALVE	SHUT
BARO PRESS (L & R)	As required
CAT II	DISABLE
Pressurization	Set
RH side panels	Check
RH mask and microphone	Check
Glareshield	Check

External or APU (if installed) Power	***No. 2 Engine Running***
OVERHEAD TEST Panel .... Test all functions	OVERHEAD TEST Panel .... Test all functions except ENG FIRE 1 & 2.

NOTE: ***Airplanes equipped with a 2 channel Stall Warning & Identification System:*** *The Stall Warning and Stall Identification systems must be checked and confirmed operational prior to each flight.*

Airplanes equipped with a 3 channel Stall Warning & Identification System: *The Stall Warning and Stall Identification systems must be checked and confirmed operational prior to the first flight of the day.*

Roof panel	Check
Autopilot/Yaw Damper	Check
Electric Trim	Test
Fuel used	Reset
Clocks	Set
FMS, Navaids and V bugs	Set
N_{1REF}	Set
Altimeters (3)	Set and checked

Continued Next Page ⟶

BEFORE START CHECKS (continued)

Electronic Standby Instrument System (ESIS)........... Check - No failure flags
Briefing... Given
Cabin notices .... On
EMERG lights... ARM

START CHECKS

Brakes... PARK
BEACON .... On
ENG CMPTRs.. AUTO
Fuel pumps .... ON
START PWR... Push PWR ON - light illuminates

NOTE: During start, there may be a slow or erratic indication of fuel flow.

CAUTION: VERIFY N_1 ROTOR ROTATION PRIOR TO PLACING THE *HP COCK* TO *ON*.

CHECK THE OPERATING ANNUNCIATOR EXTINGUISHES AT APPROXIMATELY 45% N_2 RPM.

IF ANY OF THE FOLLOWING CONDITIONS OCCUR, ABORT THE START BY IMMEDIATELY CLOSING THE *HP COCK*, THEN PUSH THE *PWR ON PUSH FOR ABORT* SWITCH:

- **NO LIGHT-OFF WITHIN 10 SECONDS OF OPENING THE *HP COCK*.**
- **ITT RAPIDLY APPROACHES 978° C.**
- **IDLE RPM (APPROXIMATELY 27% N_1 WITH 48-67% N_2) NOT REACHED BY 50 SECONDS AFTER LIGHT-OFF.**
- ***OIL LO PRESS* ANNUNCIATOR NOT EXTINGUISHED BEFORE IDLE RPM.**
- **N_1 OR N_2 STOPS INCREASING BEFORE REACHING IDLE RPM.**

ENG 2 (if not running) .... Push OPERATING - light illuminates.
ENG 1 .... Push OPERATING - light illuminates.

AFTER START CHECKS

START PWR .... Off

EXT PWR (if used) .... Disconnect and OFF

Generators 1 & 2 .... Check on line

APU GEN (if APU installed) .... TRIP

Volts and Amps .... Check

NOTE: If APU is installed and air is being used for air conditioning, the MAIN AIR VLVs 1 & 2 should be selected CLOSED.

Air conditioning .... As required

ALTERNATORS .... ON

Heaters .... ON

PITOT AMPS .... Check

ENG ANTICE .... As required

AIR BRAKES .... SHUT

APR .... Test

BEFORE TAKE-OFF CHECKS

Brakes .... Check

Instruments .... Check

Altimeters .... LH and RH reading within 40 ft of each other.

THRUST REVERSERS .... ARM

Engine Computer, Rudder Bias & T/R .... Check

FLAPS .... Set

Seats and Harnesses .... Secure

Windows .... Closed

Briefing .... Review

BATT AMPS .... Below 20

Fuel .... Check quantity and balance

FMS .... Check

TCAS .... Test

APU (if installed) .... As required

TEMPORARY CHANGE

P/N 140-590032-0005TC17 Issue 2

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005.
AIRPLANE EFFECTIVITY:	All Hawker 800XP Pro Line 21 airplanes.
DESCRIPTION OF CHANGE:	Revised procedure and procedure order for After Take-off Checks.
FILING INSTRUCTIONS:	Insert Temporary Change 17, Issue 2, Page 2 of 2, into Sub-section 4.10, NORMAL PROCEDURES, to face Page 9.

Sub-section 4.10 - NORMAL PROCEDURES

AFTER TAKE-OFF CHECKS

Refer to Page 2 of 2.

Approved by: Ronald L Dyke
for Randolph Shields, ODA Lead administrator
Hawker Beechcraft Corporation
ODA-230339-CE

Approval Date: 10/1/2012

Sub-section 4.10 - NORMAL PROCEDURES

AFTER TAKE-OFF CHECKS

Read the following procedures in place of the existing procedures:

NOTE: The recommended airspeed for flight in turbulent conditions is 230 KIAS/0.70 Mach.

LANDING GEAR .... Up
Yaw damper.. Engage
FLAPS .... Up
THRUST .... Set Climb Power
MAIN AIR VLVs 1 & 2 .... OPEN
APR .... Disarm
ENG SYNC.. N_1 or N_2
ANTICE and ENG IGNITION .... As required

LINE UP CHECKS

EXTERIOR LIGHTS	As required
Transponders	Check
TCAS	TA/RA
Flight controls	Full and free movement
ANTICE and ENG IGNITION	As required
MWS	Check
FATS	Check - FLAPS, Airbrakes, Trims and $V_{SPEEDS.}$
APR	ARM

AFTER TAKE-OFF CHECKS

NOTE: The recommended airspeed for flight in turbulent conditions is 230 KIAS/0.70 Mach.

LANDING GEAR	Up
MAIN AIR VLVs 1 & 2	OPEN
Yaw damper	Engage
FLAPS	Up
APR	Disarm
ENG SYNC	N_1 or N_2
ANTICE and ENG IGNITION	As required

CLIMB CHECKS

Altimeters	Set and checked
EXTERIOR LIGHTS	As required
Cabin notices	As required
Pressurization	Check
OXYGEN	Check contents

CRUISE CHECKS

Pressurization	Check
OXYGEN	Check contents
ANTICE and ENG IGNITION	As required
Systems	Check and monitor

NOTE: To extend engine life, engine ITT should not exceed 932° C during cruise operation.

CABIN ALTITUDE SETTING FOR LANDING
(Apply setting correction to field pressure altitude)

QNH - mb or HPa	970	975	980	985	990	995	1000
in Hg	28.64	28.79	28.94	29.09	29.23	29.38	29.53
Correction - ft	+1500	+1350	+1250	+1100	+950	+800	+650
QNH - mb or HPa	1005	1010	1015	1020	1025	1030	1035
in Hg	29.68	29.82	29.97	30.12	30.27	30.41	30.56
Correction - ft	+550	+400	+250	+100	0	-150	-300

Landing Reference Speed (V_{REF}) UP TO Maximum Landing Weight

Weight	17,000 lb 7711 kg	18,000 lb 8165 kg	19,000 lb 8618 kg	20,000 lb 9072 kg	21,000 lb 9525 kg	22,000 lb 9979 kg	23,000 lb 10,433 kg	23,350 lb 10,591 kg
V_{REF} KIAS	108	111	114	118	121	123	126	127

Landing Reference Speed (V_{REF}) ABOVE Maximum Landing Weight

Weight	24,000 lb 10,886 kg	25,000 lb 11,340 kg	26,000 lb 11,793 kg	27,000 lb 12,247 kg	28,000 lb 12,701 kg
V_{REF} KIAS	129	131	134	136	137

Minimum Single Engine V_{REF} = 111 KIAS
Icing ....Use V_{REF} + 10
No Flap ....Use V_{REF} + 15
Icing/No Flap.....................Use V_{REF} + 30

DESCENT CHECKS

MAIN AIR VLVs 1 & 2 ....OPEN
Pressurization ....Set
Briefing..Given

NOTE: During descent, at low thrust lever settings, the fuel flow indication may become erratic or indicate zero.

Hawker 800XP

TEMPORARY CHANGE

P/N 140-590032-0005TC1

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-005, Dated Nov 30, 2001, or later revision.
AIRPLANE SERIAL NUMBERS AFFECTED:	Hawker 800XP 258541, 258556, 258567 and After.
DESCRIPTION OF CHANGE:	Instructions regarding erroneous EGPWS announcements during approach or landing.
FILING INSTRUICTIONS:	Insert this Temporary Change into the Hawker 800XP FAA Approved Airplane Flight Manual to face page 11 in Sub-Section 4.10 (Normal Procedures Section). Discard and rescind this Temporary Change upon implementation of the appropriate

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

SUB-SECTION 4.10 - NORMAL PROCEDURES

LANDING CHECKS

Erroneous EGPWS announcements of "TOO LOW GEAR" and/or "DON'T SINK" may occur during an approach or landing. If either of these are experienced during an approach, perform the following:

If insufficient time exists prior to landing:

Execute a go-around.

If sufficient time exists prior to landing:

LANDING GEAR..Check - Down with 3 greens
Standby gear indicators..Check

If landing gear indications are normal:

Perform the normal LANDING CHECKS and make a normal landing

Approved By: ....

for Ronald K. Rathgeber, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 11/30/01

APPROACH CHECKS

Altimeters	Set and checked
F/DK VLV	CLOSE
EXTERIOR LIGHTS	As required
Cabin notices	On
Seats and harnesses	Secure
Nosewheel steering	Handwheel clear
Fuel	Check quantity and balance

NOTE: When set through the FMS, V_{APP} is automatically set at V_{REF} +10. If desired, V_{APP} can be set to another value through the REFs menu on the PFD.

V_{REF}/V_{APP}/Landing distance	Set and computed
CAT II checks	As required (see CAT II CHECKS, this Sub-section).

LANDING CHECKS

NOTE: If icing conditions exist, or if ice has formed on the unprotected parts of the airframe prior to approach, add 10 KIAS to the normal approach and landing speeds. Landing distance is increased by 15%.

AIR BRAKES	SHUT
APR	ARM
LANDING GEAR	Down
Nosewheel steering	Centered
ENG SYNC	OFF
Altimeters	Set and checked
FLAPS	Set
MAIN AIR VLVs 1 & 2	CLOSE
AP & YD	Disengage

MISSED APPROACH CHECKS

Thrust	As required
FLAPS	Retract to 15°
Pitch Attitude	12°
Airspeed	V_{REF} minimum ***or*** V_{REF} + 10 KIAS minimum if FLAPS retracted.
LANDING GEAR	Up

AFTER LANDING CHECKS

AIR BRAKES	SHUT
FLAPS	Up
Exterior lights	As required
PITOT/VANE HEAT L & R	OFF
ANTICE	As required
APR	Disarm
Transponder	STANDBY

WARNING: DO NOT USE RADAR IN THE VICINITY OF GROUND PERSONNEL. A HAZARDOUS AREA EXTENDS UP TO 2 FEET IN FRONT OF THE RADAR DISH.

RADAR	STANDBY
APU (if installed)	As required
Air conditioning	As required

SHUT DOWN CHECKS

NOTE: Close the HP COCKS after a minimum of 3 minutes at idle RPM, including taxi time.

Both Engines and APU (if installed) Running	
Brakes	PARK
THRUST REVERSERS	OFF
EMERG LIGHTS	OFF
HP COCKS	Close
Fuel pumps	OFF
ENG CMPTRS	OFF
BEACON	OFF
Cabin notices	As required
GEN FAIL 1 & 2 annunciators	Illuminated
SCREEN HEAT & ALTERNATORS	OFF

Both Engines Running and APU (if installed) Not Running	
Brakes	PARK
THRUST REVERSERS	OFF
EMERG LIGHTS	OFF
MAIN AIR VLV 1	CLOSE
HP COCK 1	Close
L PUMP (fuel)	OFF
ENG CMPTR 1	OFF
Cabin notices	As required
GEN 1 FAIL annunciator	Illuminated
SCREEN HEAT & ALTERNATORS	OFF

Hawker Beechcraft Corporation

Hawker 800XP
Pro Line 21

TEMPORARY CHANGE

P/N 140-590032-0005TC21

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005.
AIRPLANE EFFECTIVITY:	All Hawker 800XP Pro Line 21 airplanes
DESCRIPTION OF CHANGE:	Changed "EMERG LTS" to read "EMERG lights". Revised the ENG CMPTR steps in the SHUT DOWN CHECKS and LEAVING AIRPLANE (TERMINATING FLIGHT) CHECKS in Sub-section 4.10 - NORMAL PROCEDURES.
FILING INSTRUCTIONS:	Insert Temporary Change 21 into Sub-section 4.10 - NORMAL PROCEDURES. • Page 1 of 2 to face Page 12. • Page 2 of 2 will face Page 13.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.10 - NORMAL PROCEDURES

SHUT DOWN CHECKS

NOTE: Close the HP COCKS after a minimum of 3 minutes at idle RPM, including taxi time.

Both Engines and APU (if installed) Running	
Brakes	PARK
THRUST REVERSERs	OFF
EMERG lights	OFF
HP COCKS	Close
Fuel PUMPs	OFF
BEACON	OFF
Cabin notices	As required
GEN FAIL 1 & 2 annunciators	Illuminated
SCREEN HEAT & ALTERNATORs	OFF
ENG CMPTRs	OFF - After Engine N_2 rotation stops.

Both Engines Running and APU (if installed) Not Running	
Brakes	PARK
THRUST REVERSERs	OFF
EMERG lights	OFF
MAIN AIR VLV 1	CLOSE
HP COCK 1	Close
L PUMP (fuel)	OFF
Cabin notices	As required
GEN 1 FAIL annunciator	Illuminated
SCREEN HEAT & ALTERNATORs	OFF
ENG CMPTR 1	OFF - After Engine N_2 rotation stops.

TEMPORARY CHANGE

P/N 140-590032-0005TC21

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.10 - NORMAL PROCEDURES

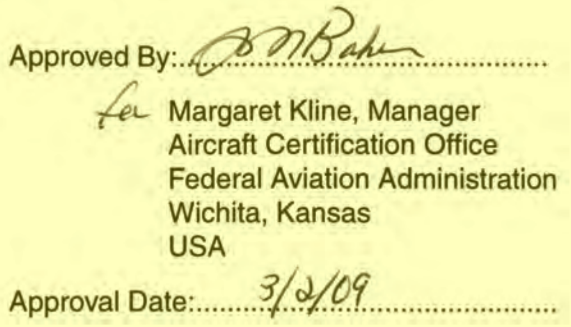
LEAVING AIRPLANE (TERMINATING FLIGHT) CHECKS

If the LEAVING AIRPLANE (TERMINATING FLIGHT) CHECKS are completed, the EXTERNAL CHECKS should be completed before the next flight.

With APU (if installed) Only Running	
RADIO 1 & 2 Masters	OFF
Electronic Standby Instrument System (ESIS)	Disarm
APU	Shut down
STBY INV	OFF
EXTERIOR & INTERIOR LIGHTS	OFF
Flight controls	Locked
OXYGEN SUPPLY	OFF
BATT	OFF
VESTIBULE LIGHT	OFF

With No. 2 Engine Only Running	
RADIO 1 & 2 Masters	OFF
Electronic Standby Instrument System (ESIS)	Disarm
MAIN AIR VLV 2	CLOSE
STBY INV	OFF
HP COCK 2	Close
R PUMP (fuel)	OFF
GEN 2 FAIL annunciator	Illuminated
BEACON	OFF
EXTERIOR & INTERIOR LIGHTS	OFF
Flight controls	Locked
OXYGEN SUPPLY	OFF
ENG CMPTR 2	OFF - After Engine N_2 rotation stops.
BATT	OFF
VESTIBULE LIGHT	OFF

Ensure that all of the requirements listed under POST FLIGHT CHECK (located in Part II of the GROUND HANDLING CHECKLIST) are accomplished after the last flight of the day.



Approved By:..

for Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date:.........3/2/09.........

LEAVING AIRPLANE (TERMINATING FLIGHT) CHECKS

If the LEAVING AIRPLANE (TERMINATING FLIGHT) CHECKS are completed, the EXTERNAL CHECKS should be completed before the next flight.

With APU (if installed) only running	
RADIO 1 & 2 Masters	OFF
Electronic Standby Instrument System (ESIS)	Disarm
APU	Shut down
STBY INV	OFF
EXTERIOR & INTERIOR LIGHTS	OFF
Flight controls	Locked
OXYGEN SUPPLY	OFF
BATT	OFF
VESTIBULE LIGHT	OFF

With No. 2 engine only running	
RADIO 1 & 2 Masters	OFF
Electronic Standby Instrument System (ESIS)	Disarm
MAIN AIR VLV 2	CLOSE
STBY INV	OFF
HP COCK 2	Close
R PUMP (fuel)	OFF
ENG CMPTR 2	OFF
GEN 2 FAIL annunciator	Illuminated
BEACON	OFF
EXTERIOR & INTERIOR LIGHTS	OFF
Flight controls	Locked
OXYGEN SUPPLY	OFF
BATT	OFF
VESTIBULE LIGHT	OFF

Assure that all of the requirements listed under POST FLIGHT CHECK (located in Part II of the GROUND HANDLING CHECKLIST) are accomplished after the last flight of the day.

EGPWS PRE-FLIGHT CHECKS

Pilot's & Copilot's PFDs and MFDs.............................Terrain enabled

NOTES:

1. *Prior to initiating the self test, make sure PS1, PS2, PE, XS 1, XS 2 and XE busses are powered.*
2. *Aural volume during the test is approximately 6dB lower than the actual volume during a warning.*
3. *Holding the test switch for greater than 2 seconds will initiate an expanded self test.*

EGPWS TEST ....Push for less than 2 seconds

Verify the following

(a) The cyan TERR TEST message is displayed on the MFDs and PFDs.

(b) The yellow GPWS message is momentarily displayed on the PFDs.
The yellow WS message is momentarily displayed on the PFDs.
The yellow TERR message is momentarily displayed on the PFDs with an amber TERRAIN FAIL message momentarily displayed on the MFDs and PFDs.
All fail messages are removed.

(c) The amber GND PROX message is displayed on the PFDs.

(d) The aural "GLIDESLOPE" message is announced.

(e) The amber GND PROX message is removed from the PFDs.

(f) The amber GS INHIBIT PBA is momentarily turned on.

(g) The red PULL UP message is displayed on the PFDs.

(h) An aural "PULL UP" message is announced.

(i) The red PULL UP message is removed from the PFDs.

(j) The red WINDSHEAR message is displayed on the PFDs.

(k) The aural siren, with "WINDSHEAR WINDSHEAR WINDSHEAR" message is announced.

(l) The red WINDSHEAR message is removed from the PFDs.

(m) The amber WINDSHEAR message is displayed momentarily on the PFDs.

(n) The Terrain Display Self Test Pattern is displayed on the MFDs and PFDs.

(o) The red PULL UP message is displayed on the PFDs.

Continued Next Page ⟶

EGPWS PRE-FLIGHT CHECKS (continued)

(p) The aural "TERRAIN TERRAIN PULL UP" message is announced.

(q) The red PULL UP message is removed from the PFDs.

(r) The GND PROX message is displayed momentarily on the PFDs.

(s) The Terrain Display Self Test Pattern turns off after several sweeps of the terrain display.

(t) The TERR TEST message is removed from the MFDs and PFDs.

TCAS CHECKS

BEFORE TAKE-OFF CHECKS

TCAS.. TEST

NOTE: The transponder and altitude reporting must be on for the TCAS system to properly test and function. Upon completion of the test mode, a properly functioning TCAS will issue an aural alert of TCAS SYSTEM TEST OK.

Selection of the TCAS test in flight will inhibit TCAS operation for approximately 10 seconds.

TCAS Traffic display .... AS REQUIRED
TCAS Altitude limits .... AS REQUIRED

IN FLIGHT OPERATION

1. Selection of TA or TA/RA will respectively provide aural traffic advisories or aural traffic advisories and aural and visual conflict resolution advisories regardless of PFD or MFD display formats. The visual RA is provided on the PFD vertical speed scale by green and red bands depicting acceptable and forbidden commanded vertical speed ranges.

2. TCAS traffic can be displayed on the MFD utilizing the TCAS only display or as an overlay on compatible map formats. As a minimum, Traffic Advisory (TA), depicted by solid yellow circles and Resolution Advisory (RA), depicted by solid red squares, can be displayed by selecting TCAS data for display on the MFD using the TFC legend button on the MFD.

3. The display can be tailored as desired utilizing the traffic select and ALT LIMITS on the TCAS page and the display range selection on the DCP. Selection of TRAFFIC to ON will present additional targets outside the TA/RA envelope as defined by the altitude limit (ALT LIMITS) selection.

   The ALT LIMITS allows selection of NORM (traffic located ±2700 ft of your altitude) and ABOVE (traffic located from 2700 ft below to 9900 ft above your altitude) and BELOW (traffic located from 2700 ft above to 9900 ft below your altitude). ABOVE and BELOW can be selected together to provide coverage of ±9900 ft of your altitude. The range of the display can be changed to provide optimum depiction of traffic targets based on current airplane speed.

4. Traffic Advisory (TA) aural alerts are inhibited below 600 ft AGL in a climb and 400 ft AGL in a descent. Visual TA (TRAFFIC) messages will continue to be issued.

Continued Next Page ⟶

TCAS CHECKS (continued)

5. Resolution Advisories (RA) are inhibited below 1100 ft AGL in a climb and 900 ft AGL in a descent, (a TA ONLY message will be presented under these conditions). Increased climb RAs are inhibited with FLAPS DN.

6. The pilot should not initiate evasive maneuvers using information from the traffic display only or on a Traffic Advisory (TA) only without visually sighting the traffic. These displays and advisories are intended only for assistance in visually locating the traffic and lack the flight path trend necessary for use in evasive maneuvering.

   However, while climbing or descending, modest changes in vertical speed based on traffic display information are not considered evasive maneuvering.

7. Compliance with a TCAS Resolution Advisory is accomplished by changing vertical speed (thrust/airplane configuration) as required to comply with guidance presented by the PFD vertical speed indicator.

   The TCAS II RA algorithms are based on the pilot initiating the initial 0.25g incremental maneuver within approximately 5 seconds, and within approximately 2.5 seconds if an individual corrective RA increase or reverse is issued. The reversal is based on a 0.5g incremental maneuver.

8. Compliance with a TCAS RA is necessary unless the pilot considers it is unsafe to do so, or unless the pilot has better information about the cause of the RA and can maintain safe separation (visual acquisition of and safe separation from a nearby aircraft, obvious TCAS II system failure, etc.)

WARNING: NONCOMPLIANCE WITH A *CROSSING* RA BY ONE AIRPLANE MAY RESULT IN REDUCED VERTICAL SEPARATION; THEREFORE SAFE HORIZONTAL SEPARATION MUST ALSO BE ASSURED BY VISUAL MEANS.

ONCE A *NONCROSSING* RA HAS BEEN ISSUED, SAFE OPERATION COULD BE COMPROMISED IF CURRENT VERTICAL SPEED IS CHANGED, EXCEPT AS NECESSARY TO COMPLY WITH THE RA.

THIS IS BECAUSE TCAS TO TCAS COORDINATION MAY BE IN PROGRESS WITH THE INTRUDER AIRPLANE, AND ANY CHANGE IN VERTICAL SPEED THAT DOES NOT COMPLY WITH THE RA MAY NEGATE THE EFFECTIVENESS OF THE OTHER AIRCRAFT'S COMPLIANCE WITH ITS RA.

NOTE: The consequence of not following an RA may result in additional RAs in which aural alert and visual annunciations may not agree with each other.

Continued Next Page ⟶

TCAS CHECKS (continued)

9. A Go-Around procedure should be executed if a CLIMB RA is issued with the airplane in a landing configuration. Certain climb RAs are inhibited with the FLAPS fully extended. By reconfiguring the airplane, the TCAS will have greater flexibility in resolving any conflict.

   Care has been taken to make sure of airplane capability to comply with issued RAs under most normal circumstances. Because of the limited number of inputs to TCAS II for performance inhibits, in some instances where inhibiting RAs may be appropriate it is not possible to do so.

   In these cases, TCAS II may command maneuvers that may significantly reduce stall margins or result in stall warning. Therefore, the stall warning stick shaker must be respected when following an RA.

   Conditions where this may occur include:

   - Bank angle in excess of 15°.
   - One engine inoperative.
   - Abnormal configuration such as landing gear not retractable.
   - Leaving the airplane in inappropriate configurations when the CLIMB RA occurs.
   - Operations at airports outside 0 to 5300 ft MSL or temperatures outside of ISA ±27.8° C.
   - Speeds below normal operating speeds.
   - Buffet margin less than 0.3g.

10. Evasive maneuvering must be limited to the minimum required to comply with the RA. Excessive responses to RAs are not desirable or appropriate because of other potential traffic and ATC consequences. From level flight, proper response to an RA typically results in an altitude deviation of 300 to 500 ft in order to successfully resolve a traffic conflict.

11. Preventative advisories are also posted after a corrective advisory has been satisfied and the TCAS II airplane is projected to have adequate altitude separation. The corrective RA is said to soften, indicating that a gradual return to the original flight path or clearance is allowed.

    As the corrective advisory softens to a preventative advisory, the green arc is removed, the magnitude of the red arc decreased and MONITOR VERTICAL SPEED is announced. The new preventative RA restricts the rate (vertical speed) the pilot may use in returning to the original flight path.

    The RA may soften several times before CLEAR OF CONFLICT; MONITOR VERTICAL SPEED will be announced only after the initial downgrading of the corrective RA. Utilizing the softening advisory will greatly reduce the ultimate deviation caused by the original corrective resolution advisory.

12. Following a TCAS II CLEAR OF CONFLICT advisory, the pilot should expeditiously return to the applicable ATC clearance unless otherwise directed by ATC.

CAT II CHECKS

Approach Checks (Before Localizer Capture)

Reversion/sensor switches	Normal/Green
Active NAV Source	LOC 1 (pilot) - LOC 2 (copilot)
Localizer Frequency (both)	Select and identify
Localizer course (both)	Set
DH (both)	Set to Radio Altitude
CAT II Select	Enable

When Ready To Capture Localizer

Flight Guidance	Arm APP
Autopilot	Engaged

When Ready To Capture Glideslope

PFD (both)	CAT II annunciated green

ICING CONDITIONS

ENG IGN 1	ON
ENG IGN 2	ON
ENG ANTICE 1	ON
ENG ANTICE 2	ON

NOTES:

1. *The airframe system should be maintained fully primed by selecting the timer on for 30 seconds at the start of climb, for 2 minutes at the top of descent and if icing conditions are expected, preferably for 2 minutes prior to entering icing conditions.*

2. *When icing conditions prevail, a further period of operation should be selected prior to the timer reaching zero.*

WING/TAIL ANTICE	Select before entering icing and set for 10 minutes.

NOTE: This is a recommended airspeed. If it is necessary to fly at another airspeed, it may be adjusted to within the chart shown in the Pilot's Operating Manual, Section V, Sub-section 2, Figure 2.

Airspeed	230 KIAS Recommended

RVSM CHECKS

In Airspace Designated as RVSM

ADC 1, 2	Check
Altimeters	Compare. Repeat at least once per hour.
Transponders	Signal from flying pilot's ADC (Change as flying pilot changes).

TAKEOFF and LANDING at AIRFIELDS ABOVE 9000 ft FIELD PRESSURE ALTITUDE

BEFORE START CHECKS

CABIN HI DATUM	Select
DUMP VALVE	Check - SHUT
GROUND PRESS TEST VALVE	Check - NORMAL FLIGHT position
MANUAL CABIN ALTITUDE CONTROL	Check - Full DECREASE position
F/DK VLV	CLOSE
FLOOD	CLOSE
FAN	As required
PRESSN	AUTO
MAIN AIR VLVs 1 & 2	Check - CLOSE
MAIN AIR VLV 1 & 2 annunciators	Extinguished
CABIN TEMP selector	Set to the required temperature on the AUTO scale.
CABIN CONTROLLER knob	Set the CABIN ALT at the maximum value
RATE knob	Set at mid range

AFTER START CHECKS

If Air Circulation Is Required

MAIN AIR VLVs 1 & 2	Select OPEN
MAIN AIR VLV 1 & 2 annunciators	Illuminated

Adjust the temperature selector as required. The F/DK VLV can be used for rapid heating of the flight deck.

BEFORE TAKE-OFF CHECKS

MAIN AIR VLVs 1 & 2	CLOSE
MAIN AIR VLV 1 & 2 annunciators	Extinguished
F/DK VLV	CLOSE
PRESSN	AUTO

AFTER TAKE-OFF CHECKS

MAIN AIR VLVs 1 & 2	OPEN
MAIN AIR VLV 1 & 2 annunciators	Extinguished
DUCT OVHT annunciator	Extinguished

Continued Next Page →

TAKEOFF and LANDING at AIRFIELDS ABOVE 9000 ft FIELD PRESSURE ALTITUDE (continued)

When Established In The Climb

CABIN CONTROLLER....................................Set the ACFT ALT to cruise altitude + 2000 ft.

RATE knob ....Set desired rate of descent not to exceed 300 ft/minute.

Once The Cabin Pressure Altitude Drops Below 8500 ft

CABIN HI-DATUM ....De-select

NOTE: CABIN HI DATUM must be de-selected by the time the airplane has reached an altitude of 25,000 ft.

DESCENT CHECKS

Start Of Descent

CABIN PRESSURE CONTROL.......................Set to 10,000 ft

CABIN HI-DATUM ....Select

RATE knob ....Adjust to give the desired rate of climb

BEFORE LANDING CHECKS

Apply the correction given in the following table for the appropriate QNH to the field pressure altitude, then set that value on the CABIN ALT scale of the pressure controller.

QNH - mb	960	965	970	975	980	985	990
QNH - in Hg	28.36	28.51	28.64	28.79	28.94	29.09	29.23
Correction in ft	+1750	+1650	+1500	+1350	+1250	+1100	+950
QNH - mb	995	1000	1005	1010	1015	1020	1025
QNH - in Hg	29.38	29.53	29.68	29.82	29.97	30.12	30.27
Correction in ft	+800	+650	+550	+400	+250	+150	0
QNH - mb	1030	1035	1040	1045	1050		
QNH - in Hg	30.41	30.56	30.92	31.07	31.22		
Correction in ft	-150	-300	-450	-550	-700		

NOTE: If the corrected field pressure altitude is greater then 10,000 ft, set the cabin pressure controller to 10,000 ft.

Pressurization ....Set

Continued Next Page →

TAKEOFF and LANDING at AIRFIELDS ABOVE 9000 ft FIELD PRESSURE ALTITUDE (continued)

Prior to 250 ft AGL:

MAIN AIR VLVs 1 & 2 .... CLOSE
F/DK VLV... CLOSE

NOTE: If necessary, open the Dump Valve slowly, so as to make sure zero differential pressure prior to touchdown.

Cabin differential pressure... 0 psi
DUMP VALVE.. As required

AFTER LANDING CHECKS

DUMP VALVE (if open).. CLOSE

SECTION 5

PERFORMANCE

PERFORMANCE IS PRESENTED IN THIS SECTION FOR CONDITIONS WHICH MAY EXCEED APPROVED LIMITATIONS.

ALWAYS CONSULT SECTION - 2 FOR AIRPLANE LIMITATIONS.

This Section is divided into the following Sub-sections:

5.05 ....General

5.10 ....Operating Speeds

5.15 ....Take-Off WAT Data

5.20 ....Take-Off Field Length, APR ON

5.25 ....Net Take-Off Flight Path, APR ON

5.30 ....Take-Off Field Length, DE-RATE

5.35 ....Net Take-Off Flight Path, DE-RATE

5.40 ....En-Route Data

5.45 ....Landing WAT Data

5.50 ....Landing Field Lengths

5.55 ....Gross Performance

Take-off performance is given for two flap positions and is identified by a stated flap setting and the following colors.

Green paper.....................................Take-Off Flaps 15°

Pink paper.......................................Take-Off Flaps 0°

White paper......................................Charts which are common to both take-off flap settings or for flight regimes other than take-off.

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SUB-SECTION 5.05

GENERAL

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INTRODUCTION

This Sub-section contains performance information necessary for operation in compliance with applicable performance requirements, data required by applicable noise regulations and other information essential for implementing special operational requirements.

Standard Condition of Airplane

The performance information given in this Section 5 relates to an average airplane as described in Section 1, powered by two approved turbo-fan engines listed in Section 2 of this Airplane Flight Manual.

The surface finish should be average gloss with condition and fit of joints, panels, anticing equipment, doors and other externally mounted items being generally good.

The approved flap settings are listed under CONFIGURATION in this Sub-section 5.05.

Procedures and Information

Details of the airplane procedures essential to achieve the performance standard of this Section for normal and abnormal operations are given in Section 4 Abnormal/Normal Procedures.

Performance

The performance applies to an airplane equipped with two Allied-Signal Engines TFE731-5BR-1H and equipped with an Automatic Power Reserve system (APR) and in the configurations which are stated in the following information. The basic configuration is shown in Figure 1.1, Section 1.

The take-off performance information in this Section is not valid unless the Automatic Power Reserve system (APR) is operative and armed for takeoff.

CONFIGURATION

Normal Take-off Thrust

Normal take-off thrust is verified by the fan RPM ($N_{1\ REF}$) and is set with thrust levers fully forward. Refer to Figures 5.05.1 and 5.05.2.

The target value of N_1 at 80 KIAS is $N_{1REF.}$ Due to wind strength and direction, altitude and temperature, the value of N_1 achieved may vary, and up to 80 KIAS it is acceptable to have an indicated N_1 which is less than $N_{1\ REF}$ by up to 1%, or which exceeds $N_{1\ REF.}$

At speeds above 80 KIAS, it is acceptable to have an indicated N_1 which is less than $N_{1\ REF}$ by up to 2%, or which exceeds $N_{1\ REF.}$

Maximum (APR) Thrust

With the thrust levers fully forward, maximum (APR) thrust is obtained automatically when the APR is armed and if the N_2 differential between engines exceeds 5%.

The APR allows maximum thrust and increases the N_1 up to 1.5%.

APR thrust can also be achieved by pushing the APR ARM and APR O/RIDE buttons with thrust levers fully forward.

TAKE-OFF REFERENCE N_1%

(Part 1 of 2: -50° C to 0° C)

APR ARMED (NOT OPERATING)

CABIN AIR OFF
ENG ANTICE OFF

ALTITUDE FT	*Outside Air Temperature° C*											ALTITUDE FT
	-50	*-45*	*-40*	*-35*	*-30*	*-25*	*-20*	*-15*	*-10*	*-5*	*0*	
15,000	98.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**15,000**
14,000	98.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**14,000**
13,000	98.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**13,000**
12,000	98.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**12,000**
11,000	98.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**11,000**
10,000	98.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**10,000**
9000	98.1	99.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**9000**
8000	96.1	97.1	98.1	99.1	100.0	100.0	100.0	100.0	100.0	100.0	100.0	**8000**
7000	93.9	95.0	96.0	97.0	98.0	99.0	99.9	100.0	100.0	100.0	100.0	**7000**
6000	92.2	93.2	94.2	95.2	96.2	97.2	98.1	99.1	100.0	100.0	100.0	**6000**
5000	90.7	91.7	92.7	93.7	94.7	95.6	96.6	97.5	98.5	99.4	100.0	**5000**
4000	89.4	90.4	91.4	92.3	93.3	94.2	95.2	96.1	97.0	97.9	98.8	**4000**
3000	88.1	89.1	90.0	91.0	91.9	92.9	93.8	94.7	95.6	96.5	97.4	**3000**
2000	86.8	87.7	88.7	89.7	90.6	91.5	92.4	93.3	94.2	95.1	96.0	**2000**
1000	85.6	86.6	87.5	88.4	89.3	90.2	91.1	92.0	92.9	93.8	94.7	**1000**
Sea Level	84.4	85.4	86.3	87.2	88.1	89.0	89.9	90.8	91.6	92.5	93.4	**Sea Level**
-1000	83.4	84.3	85.2	86.1	87.0	87.9	88.8	89.7	90.5	91.4	92.2	**-1000**

Continued on page 8

Figure 5.05.1

TAKE-OFF REFERENCE N_1%

(Part 2 of 2: 0° C to 50° C)

APR ARMED
(NOT OPERATING)

CABIN AIR OFF
ENG ANTICE OFF

ALTITUDE FT	*Outside Air Temperature° C*											ALTITUDE FT
	0	*5*	*10*	*15*	*20*	*25*	*30*	*35*	*40*	*45*	*50*	
15,000	100.0	99.4	98.7	97.8	97.0	0.0	0.0	0.0	0.0	0.0	0.0	**15,000**
14,000	100.0	99.5	98.7	97.9	97.1	0.0	0.0	0.0	0.0	0.0	0.0	**14,000**
13,000	100.0	99.5	98.7	97.9	97.1	0.0	0.0	0.0	0.0	0.0	0.0	**13,000**
12,000	100.0	99.5	98.8	98.0	97.1	96.2	0.0	0.0	0.0	0.0	0.0	**12,000**
11,000	100.0	99.6	98.8	98.0	97.2	96.2	0.0	0.0	0.0	0.0	0.0	**11,000**
10,000	100.0	99.6	98.8	98.1	97.3	96.3	95.1	0.0	0.0	0.0	0.0	**10,000**
9000	100.0	99.6	98.9	98.1	97.3	96.4	95.2	0.0	0.0	0.0	0.0	**9000**
8000	100.0	99.6	98.9	98.1	97.3	96.4	95.3	94.1	0.0	0.0	0.0	**8000**
7000	100.0	99.6	98.9	98.1	97.3	96.4	95.3	94.1	92.8	0.0	0.0	**7000**
6000	100.0	99.7	98.9	98.1	97.4	96.5	95.3	94.1	92.8	0.0	0.0	**6000**
5000	100.0	99.7	99.0	98.2	97.4	96.5	95.4	94.1	92.8	91.5	0.0	**5000**
4000	98.8	99.7	99.0	98.2	97.4	96.5	95.4	94.2	92.9	91.5	0.0	**4000**
3000	97.4	98.3	99.0	98.2	97.4	96.5	95.4	94.2	92.9	91.5	90.2	**3000**
2000	96.0	96.8	97.7	98.2	97.4	96.6	95.4	94.2	92.9	91.5	90.2	**2000**
1000	94.7	95.5	96.4	97.2	97.5	96.6	95.5	94.3	93.0	91.6	90.2	**1000**
Sea Level	93.4	94.2	95.0	95.9	96.7	96.6	95.5	94.3	93.0	91.6	90.2	**Sea Level**
-1000	92.2	93.1	93.9	94.7	95.5	96.3	95.5	94.3	93.0	91.6	90.2	**-1000**

Figure 5.05.1 Continued

TAKE-OFF REFERENCE N_1%

APR ARMED
(NOT OPERATING)

CABIN AIR OFF
ENG ANTICE ON

ALTITUDE FT	*Outside Air Temperature° C*													ALTITUDE FT
	-50	*-45*	*-40*	*-35*	*-30*	*-25*	*-20*	*-15*	*-10*	*-5*	*0*	*5*	*10*	
15,000	98.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	99.7	99.0	98.3	97.6	96.8	**15,000**
14,000	98.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	99.8	99.1	98.4	97.6	96.9	**14,000**
13,000	98.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	99.8	99.1	98.4	97.7	96.9	**13,000**
12,000	98.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	99.8	99.2	98.5	97.7	97.0	**12,000**
11,000	98.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.2	98.5	97.8	97.0	**11,000**
10,000	98.7	99.8	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.2	98.5	97.8	97.0	**10,000**
9000	98.1	99.3	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.3	98.6	97.8	97.1	**9000**
8000	96.1	97.1	98.1	99.1	100.0	100.0	100.0	100.0	100.0	99.3	98.6	97.9	97.1	**8000**
7000	93.9	95.0	96.0	97.0	98.0	99.0	99.9	100.0	100.0	99.3	98.6	97.9	97.1	**7000**
6000	92.2	93.2	94.2	95.2	96.2	97.2	98.1	99.1	100.0	99.4	98.6	97.9	97.1	**6000**
5000	90.7	91.7	92.7	93.7	94.7	95.6	96.6	97.5	98.5	99.4	98.7	97.9	97.2	**5000**
4000	89.4	90.4	91.4	92.3	93.3	94.2	95.2	96.1	97.0	97.9	98.7	98.0	97.2	**4000**
3000	88.1	89.1	90.0	91.0	91.9	92.9	93.8	94.7	95.6	96.5	97.4	98.0	97.2	**3000**
2000	86.8	87.7	88.7	89.7	90.6	91.5	92.4	93.3	94.2	95.1	96.0	96.8	97.3	**2000**
1000	85.6	86.6	87.5	88.4	89.3	90.2	91.1	92.0	92.9	93.8	94.7	95.5	96.4	**1000**
Sea Level	84.4	85.4	86.3	87.2	88.1	89.0	89.9	90.8	91.6	92.5	93.4	94.2	95.0	**Sea Level**
-1000	83.4	84.3	85.2	86.1	87.0	87.9	88.8	89.7	90.5	91.4	92.2	93.1	93.9	**-1000**

Figure 5.05.2

Maximum Continuous Thrust

Maximum continuous thrust is defined by fan RPM (compensated N_1), and is scheduled by altitude and air temperature. APR must be disarmed. Refer to Figures 5.05.3 and 5.05.4.

Maximum Continuous Thrust (MCT) Single Engine

Maximum Continuous Thrust (MCT) is the setting to be used to meet performance stated in this manual for:

(a) Final Takeoff Segment (Sub-section 5.25 Net Take-off Flight Path) following an engine failure on takeoff. The required N_1 values are $N_{1\ REF}$ -1%, where $N_{1\ REF}$ is the reference N_1 used during the take-off run.

(b) En-route configuration (Sub-section 5.40 En-route Data) following an engine failure. The required N_1 values are the N_1 values presented in Figures 5.05.3 or 5.05.4.

Setting MCT After Engine Failure on Take-off

5 minutes from start of takeoff:

APR .... Push ARM to deselect
$N_{1\ REF}$ -1%.. Set
N_2 and ITT .... Keep within MCT limitations

At the end of the Final Take-off Segment (normally 1500 ft AGL), accelerate to V_{ERC} and:

MAIN AIR VLV (operative engine) .... OPEN
En route MCT .... Set (See following *NOTE* 2)
N_2 and ITT .... Keep within MCT limitations

Method of Setting MCT for En-Route Climb Power

To set MCT for use in the enroute climb following an engine failure and with the airspeed at or higher than V_{ERC}, the MAIN AIR VALVES OPEN, and the APR system disarmed, the following procedure applies:

SYNC... As required (see *NOTE 1*)
En-route MCT .... Set (see *NOTE 2*)
N_2 and ITT .... Keep within MCT limitations

NOTES:

1. *Select SYNC OFF below 22,000 ft or SYNC ON above 22,000 ft to account for compensation bias of the N_1 engine indicator.*
2. *Select en-route MCT N_1 value from the charts in Figure 5.05.3 or 5.05.4 and adjust thrust as required.*
3. *If flight conditions require MCT to be set quickly, adjust thrust levers until green CLIMB legends display on the lower center of the N_1 / ITT scale. This gives a N_1 equal to or greater than the en-route MCT N_1 chart values.*

SYNCH ~ AS REQUIRED
CABIN AIR ~ ON
ENG ANTICE ~ OFF

MAXIMUM CONTINUOUS THRUST RATING EN-ROUTE REFERENCE N_1%

ALTITUDE	*TEMPERATURE (T_{IND})° C*																						ALTITUDE
FT	*-55*	*-50*	*-45*	*-40*	*-35*	*-30*	*-25*	*-20*	*-15*	*-10*	*-5*	*0*	*5*	*10*	*15*	*20*	*25*	*30*	*35*	*40*	*45*	*50*	FT
41,000	98.25	99.45	100.0	100.0	99.4	98.15	97.25	96.4															**41,000**
40,000	98.2	99.4	100.0	100.0	99.7	98.4	97.5	96.6															**40,000**
38,000	98.2	99.3	100.0	100.0	100.0	98.8	97.8	97.0	96.2														**38,000**
36,000	98.1	99.2	100.0	100.0	100.0	98.8	97.9	97.0	96.2														**36,000**
34,000	98.0	99.1	100.0	100.0	100.0	99.1	98.1	97.3	96.5	95.6													**34,000**
32,000	98.0	99.1	100.0	100.0	100.0	99.5	98.4	97.6	96.8	95.9													**32,000**
30,000	97.9	99.0	100.0	100.0	100.0	99.8	98.7	97.9	97.1	96.2	95.4												**30,000**
28,000	97.9	99.0	100.0	100.0	100.0	100.0	99.3	98.4	97.6	96.7	95.8	95.0											**28,000**
26,000	98.9	98.9	100.0	100.0	100.0	100.0	99.4	98.8	98.0	97.2	96.4	95.5											**26,000**
24,000	98.9	98.9	100.0	100.0	100.0	100.0	99.3	98.9	98.5	97.6	96.8	95.9	95.0										**24,000**
22,000	98.9	98.9	100.0	100.0	100.0	100.0	99.2	98.8	98.5	97.9	97.1	96.3	95.4	94.4									**22,000**
20,000	98.8	98.8	99.9	100.0	100.0	100.0	99.2	98.5	98.3	98.0	97.3	96.6	95.8	94.8	93.6								**20,000**
18,000	98.8	98.8	99.9	100.0	100.0	100.0	99.7	98.9	98.3	97.8	97.3	96.6	95.9	95.0	94.0								**18,000**
16,000	98.8	98.8	99.9	100.0	100.0	100.0	100.0	99.3	98.7	98.0	97.4	96.7	96.0	95.1	94.1	93.0							**16,000**
14,000	98.8	98.8	99.9	100.0	100.0	100.0	100.0	99.8	99.1	98.4	97.7	97.0	96.3	95.4	94.4	93.3	92.1						**14,000**
12,000	97.7	98.7	99.8	100.0	100.0	100.0	100.0	100.0	99.5	98.8	98.2	97.5	96.8	96.0	95.1	94.0	92.7	91.5					**12,000**
10,000	94.4	95.4	96.4	97.4	98.5	99.5	100.0	100.0	99.9	99.3	98.6	97.9	97.2	96.4	95.6	94.6	93.4	92.1					**10,000**
8000	90.9	91.9	92.9	93.9	94.9	95.9	96.9	97.8	98.8	99.7	99.0	98.3	97.6	96.9	96.0	95.1	94.0	92.8	91.5				**8000**
6000	87.9	88.9	89.9	90.9	91.9	92.8	93.8	94.7	95.7	96.6	97.5	98.4	98.0	97.3	96.5	95.6	94.6	93.4	92.1	90.7			**6000**
4000	85.5	86.4	87.3	88.3	89.3	90.2	91.1	92.1	93.0	93.9	94.8	95.7	96.5	97.4	96.7	95.9	94.8	93.6	92.4	91.1	89.7		**4000**
2000	82.9	83.9	84.9	85.8	86.8	87.7	88.6	89.5	90.4	91.2	92.1	93.0	93.8	94.7	95.5	96.0	94.9	93.7	92.5	91.2	89.9		**2000**
Sea Level	80.8	81.7	82.6	83.5	84.4	85.3	86.2	87.1	87.9	88.8	89.7	90.5	91.3	92.1	93.0	93.8	94.6	93.8	92.6	91.2	89.9	88.4	**Sea Level**

Figure 5.05.3

SYNCH ~ AS REQUIRED
CABIN AIR ~ ON
ENG ANTICE ~ ON

MAXIMUM CONTINUOUS THRUST RATING EN-ROUTE REFERENCE N_1%

ALTITUDE	*TEMPERATURE (T_{IND}) C*														ALTITUDE
FT	***-55***	***-50***	***-45***	***-40***	***-35***	***-30***	***-25***	***-20***	***-15***	***-10***	***-5***	***0***	***5***	***10***	**FT**
41,000	98.25	97.1	96.15	96.82	97.5	96.65	95.7	94.9							**41,000**
40,000	98.2	97.4	96.7	97.13	97.6	96.8	95.9	95.1							**40,000**
38,000	98.2	98.14	97.7	97.75	97.8	97.0	96.2	95.4	94.5						**38,000**
36,000	98.1	99.15	98.5	98.0	97.8	97.1	96.2	95.4	94.5						**36,000**
34,000	98.0	99.1	99.5	98.6	98.1	97.3	96.4	95.6	94.7	93.8					**34,000**
32,000	98.0	99.1	100.0	99.2	98.4	97.6	96.7	95.9	95.0	94.2					**32,000**
30,000	97.9	99.0	100.0	99.8	98.7	97.8	97.0	96.2	95.3	94.5	93.5				**30,000**
28,000	97.9	99.0	100.0	100.0	98.9	98.1	97.5	96.7	95.8	95.0	94.1	93.1			**28,000**
26,000	97.8	98.9	100.0	100.0	99.0	98.1	97.6	97.2	96.3	95.5	94.6	93.6			**26,000**
24,000	97.8	98.9	100.0	100.0	99.1	98.1	97.5	97.3	96.7	95.9	95.1	94.1	93.0		**24,000**
22,000	97.8	98.9	100.0	100.0	99.2	98.2	97.4	97.1	96.8	96.2	95.4	94.5	93.5	92.3	**22,000**
20,000	97.7	98.8	99.9	100.0	99.4	98.3	97.5	96.8	96.5	96.3	95.6	94.8	93.9	92.8	**20,000**
18,000	97.7	98.8	99.9	100.0	99.9	98.7	97.9	97.1	96.5	96.1	95.6	94.9	94.0	93.0	**18,000**
16,000	97.7	98.8	99.9	100.0	100.0	99.3	98.3	97.6	96.9	96.3	95.6	94.9	94.1	93.1	**16,000**
14,000	97.7	98.8	99.9	100.0	100.0	99.8	98.8	98.1	97.4	96.7	96.0	95.2	94.4	93.5	**14,000**
12,000	97.7	98.7	99.8	100.0	100.0	100.0	99.3	98.5	97.8	97.2	96.4	95.7	95.0	94.1	**12,000**
10,000	94.3	95.3	96.3	97.3	98.4	99.4	99.8	98.9	98.3	97.6	96.9	96.2	95.5	94.7	**10,000**
8000	90.9	91.9	92.9	93.9	94.9	95.9	96.9	97.8	98.7	98.0	97.3	96.6	95.9	95.1	**8000**
6000	87.9	88.9	89.9	90.9	91.9	92.8	93.8	94.7	95.7	96.6	97.5	97.0	96.4	95.5	**6000**
4000	85.5	86.4	87.3	88.3	89.3	90.2	91.1	92.1	93.0	93.9	94.8	95.7	96.5	95.8	**4000**
2000	83.0	83.9	84.9	85.8	86.8	87.7	88.6	89.5	90.4	91.2	92.1	93.0	93.8	94.7	**2000**
Sea Level	80.7	81.7	82.6	83.5	84.4	85.3	86.2	87.1	87.9	88.8	89.7	90.5	91.3	92.1	**Sea Level**

Air Conditioning

Engine bleed air for air conditioning is not to be used during takeoff at maximum or normal takeoff thrust.

Engine Intake Ice Protection

Engine intake ice protection bleeds are to be selected OFF unless accounting for performance loss in accordance with the information in this Sub-section.

> *NOTE: Throughout Section 5, wherever engine antice bleed is referred to, it shall be taken to read engine intake ice protection bleed.*

Landing Gear

- Down during takeoff until airborne.
- Up for net take-off flight path, en-route and approach climbs.
- Down for landing and go-around climb.

Wheel Brakes

Anti-skid on. Cooling time limits observed.

Air Brakes

SHUT, except that on landing they are extended to the lift dump position after touchdown.

Thrust Reversers

Stowed during flight. May be deployed on the ground to assist airplane deceleration. No reduction in stopping distance is credited for the use of thrust reverse.

Flap Settings

Takeoff and Second Segment Climb	*15° or alternatively 0°*
Final Take-off Climb	*0°*
Enroute	*0°*
Approach - All Engines	*45°*
Approach - One Engine	*25°*
Approach - Above Normal WAT Limit	*15°*
Approach Climb (i.e. go-around)	*15° in conjunction with a 25° approach flap setting or 45° landing flap setting;* *0° in conjunction with a 15° approach flap setting.* *(for landing above the WAT limit only)*
Go-Around Climb	*45°*
Landing	*45° or alternatively 25°*
Landing Run	*75° (lift dump)*

DEFINITIONS

Some of the terms which are used in several sections of this manual are defined in Section 1.

Those terms which are used mainly in the Performance Section are defined as follows.

Gross Performance

This represents the minimum performance which a fleet of airplanes can be expected to achieve if satisfactorily maintained and when flown in accordance with the required techniques. Gross performance data is provided in Sub-section 5.55.

Net Performance

The majority of the scheduled data is net performance. This is the gross performance diminished by the amount considered necessary to allow for various contingencies which cannot be directly accounted for operationally, such as the need to maneuver, unavoidable variations in piloting technique, temporarily below average performance, etc.

It is unlikely that the net performance will not be achieved in operation provided that the airplane is flown in accordance with the required techniques.

Altitudes

All field pressure or airplane altitudes throughout Section 5 of this Flight Manual are defined in pressure feet unless specifically stated to the contrary.

Reference Humidity

The relationship between temperature and humidity which defines “reference humidity” (to which the scheduled performance is related) is defined as follows:

Temperature	Relative Humidity
At and Below ISA	80%
Between ISA and ISA +28° C	Varies Linearly Between 80% and 34%
At and Above ISA +28° C	34%

Air Temperature

Unless otherwise qualified, this means the true temperature (°C) of the free air near to, but un-influenced by, the airplane.

Airspeeds

See Sub-section 5.10

Paved Runway/Hard Runway

A surface such as concrete or tarmac.

NOTE: *Throughout the manual reference to a hard runway means a paved surface unless the reference is qualified with the term "unpaved".*

Wet Runway

A runway is considered as wet when it is well soaked but without significant areas of standing water. A runway is considered well soaked when there is sufficient moisture on the runway surface to cause it to appear reflective.

Climb Gradient

The ratio expressed as a percentage:

$$\frac{\text{Change in height}}{\text{Horizontal distance travelled}} \times 100\%$$

The gradients shown on the charts are true gradients i.e. they are derived from true (not pressure) rates of climb.

FLIGHT IN ICING CONDITIONS

In severe icing conditions, ice can build up on unprotected parts of the airplane causing buffeting and increased drag which can occur at normal certificated operating speeds.

Procedures and speeds associated with these conditions are included in Sub-section 4.10 - NORMAL PROCEDURES (ICING CONDITIONS).

WIND COMPONENT/CROSSWIND

A graph to convert wind velocity into a headwind or tail wind component is given in Figure 5.05.5.

Operation In High Surface Winds

If the wind speed at a height of 33 feet (10.1 meters) exceeds 20 knots and has a tail wind component, 70% N_1 should not be exceeded on the ground except during takeoff.

When complying with the above, the following conditions shall be met during takeoff:

1. The brakes are released before 70% N_1 is reached.
2. The thrust is advanced smoothly so that full thrust is achieved at an airplane speed of approximately 15 Kts ground speed.

Maximum Demonstrated Crosswind

The maximum crosswind component in which the airplane has been demonstrated to be satisfactory for takeoff and landing is 30 knots measured at a height of 33 feet (10.1 meters) above the runway surface. The demonstrations were made with both engines operating and controllability was not found to be limiting. In strong crosswinds, into-wind aileron should be used.

Critical Engine

In a zero crosswind takeoff there is no critical engine. In a crosswind takeoff, the airplane has normal weathercock stability and tends to yaw into wind. Therefore the critical engine is that on the upwind side.

WIND COMPONENT

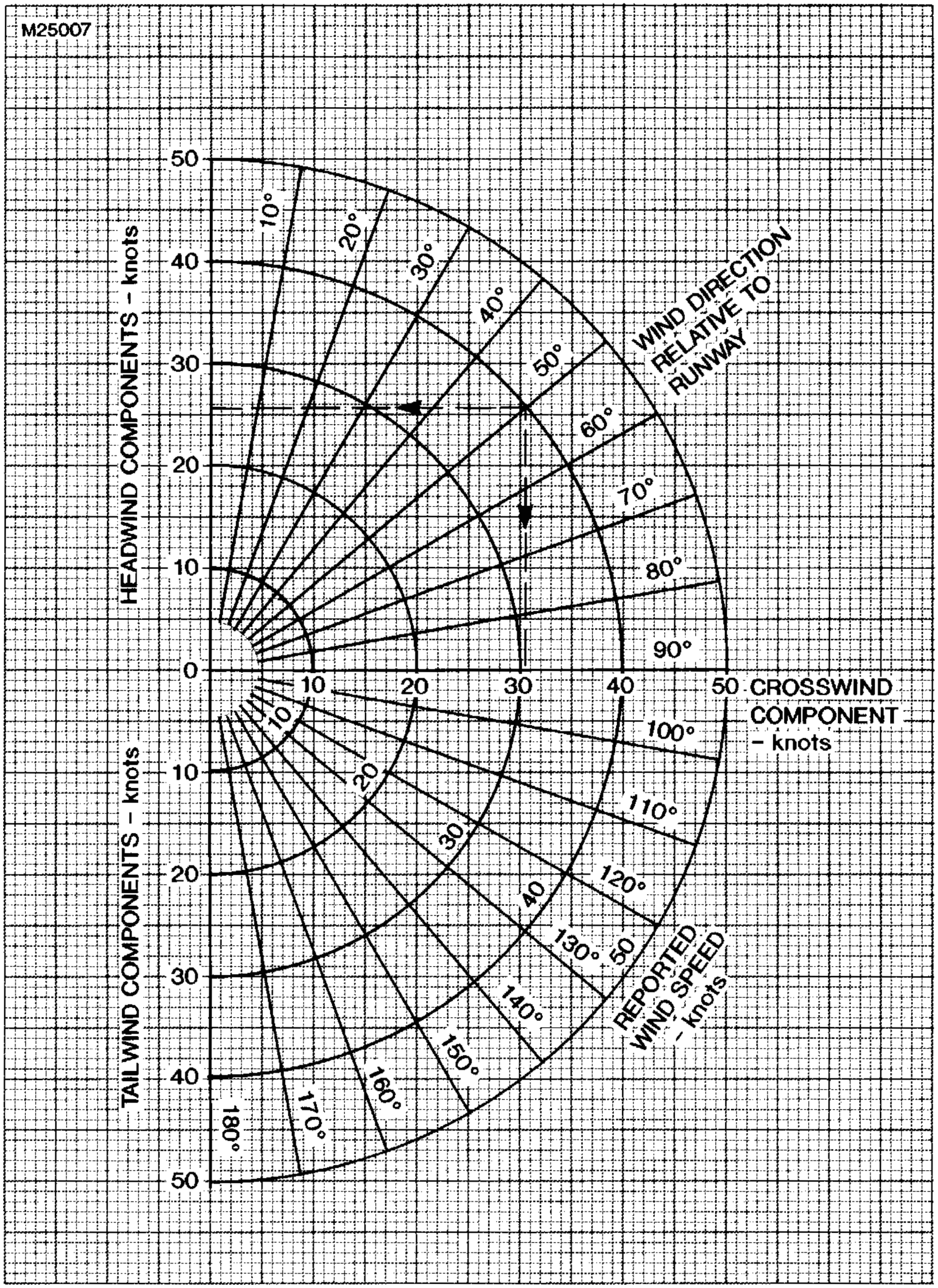

Figure 5.05.5

STALLS

Power-off stall speeds, in terms of Indicated Air Speed (IAS), are given for various configurations in Figure 5.05.6. These airspeeds apply to an altitude of 15,000 feet and are the stall identification speeds at forward CG and therefore differ from the values shown in Sub-section 5.10 Figure 5.10.4 which are based on the minimum airspeed obtained during the stall. For details of stall procedures, technique and characteristics, refer to the Pilot's Operating Manual, Section 5 - Sub-section 5-1 NORMAL HANDLING.

POWER-OFF STALL SPEEDS

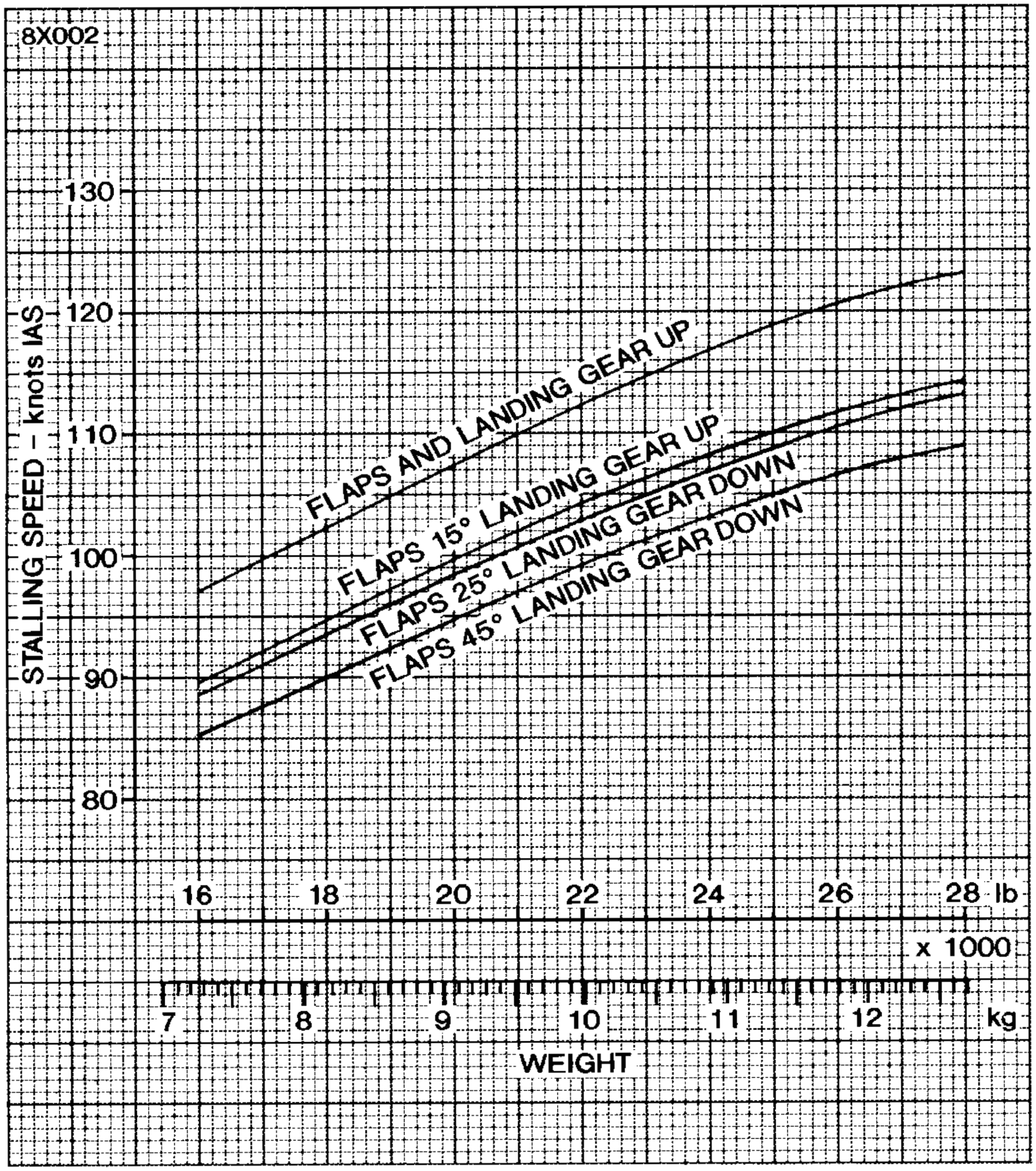

Figure 5.05.6

MANEUVERING AT HIGH ALTITUDES

Figure 5.05.7 defines for a given Mach number and Altitude the cruising weight at which the maximum demonstrated buffet level will be reached in a 1.5g maneuver or at which buffet onset will be reached in a 1.3g maneuver, whichever occurs first.

BUFFET BOUNDARY

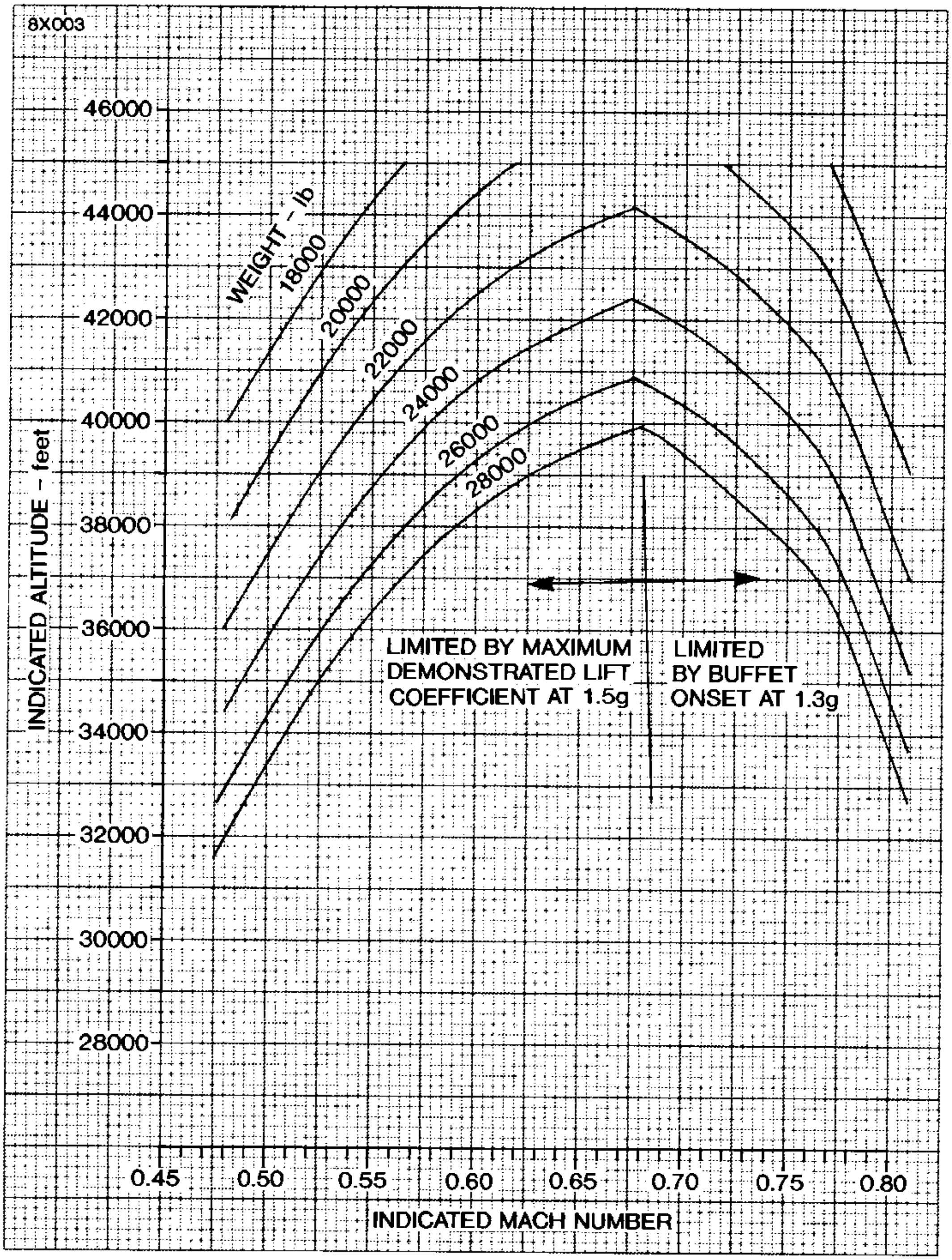

Figure 5.05.7

NOISE CERTIFICATION

General

The Hawker 800XP, powered by TFE731-5BR-1H engines, has demonstrated compliance with the Appendix C noise certification requirements of CFR Part 36 (Amendment 36-20) which are equivalent to those of ICAO, Annex 16, Volume 1, Chapter 3. The certificated noise levels at the maximum certificated take-off and landing weights of 28,000 lb (12,701 kg) and 23,350 lb (10,591 kg) respectively are below the Stage 3 limits of CFR 36 as shown below.

Position	CFR Part 36 Stage 3 Limit (EPNdB)	Airplane Certificated Noise Level (EPNdB)
Sideline	94.0	87.1
Takeoff With Cutback	89.0	79.3
Approach	98.0	93.3

NOTE: No determination has been made by the Federal Aviation Administration (FAA) that the noise levels of this airplane are or should be acceptable or unacceptable for operation at, into or out of any airport.

Noise Abatement Procedures

Unless otherwise required, the normal take-off procedures should be used. When the procedures for an airfield demand a specific noise abatement technique it should be followed, but the normal maximum pitch angle of 20° should not be exceeded.

If a noise abatement procedure is required but speeds and altitudes are not specified, the 160 knots/20° climb should be maintained up to 1000 ft above airfield elevation, at which point normal climb thrust should be selected.

Where a noise abatement procedure calls for a reduction below normal climb thrust, the reduced thrust used should not be less than the Minimum Recommended N_1 for Noise Abatement Climb, as shown in Figure 5.05.8.

Minimum Recommended N_1 For Noise Abatement Climb

Figure 5.05.8 shows the minimum recommended % N_1 for use in the noise abatement climb after the reduction of thrust from the take-off setting.

The minimum recommended setting is that which, at maximum take-off weight, would provide level flight if one engine were to fail. With both engines operating, a rate of climb typically between 1100 ft/min and 1500 ft/min will result.

MINIMUM RECOMMENDED N_1 FOR NOISE ABATEMENT CLIMB

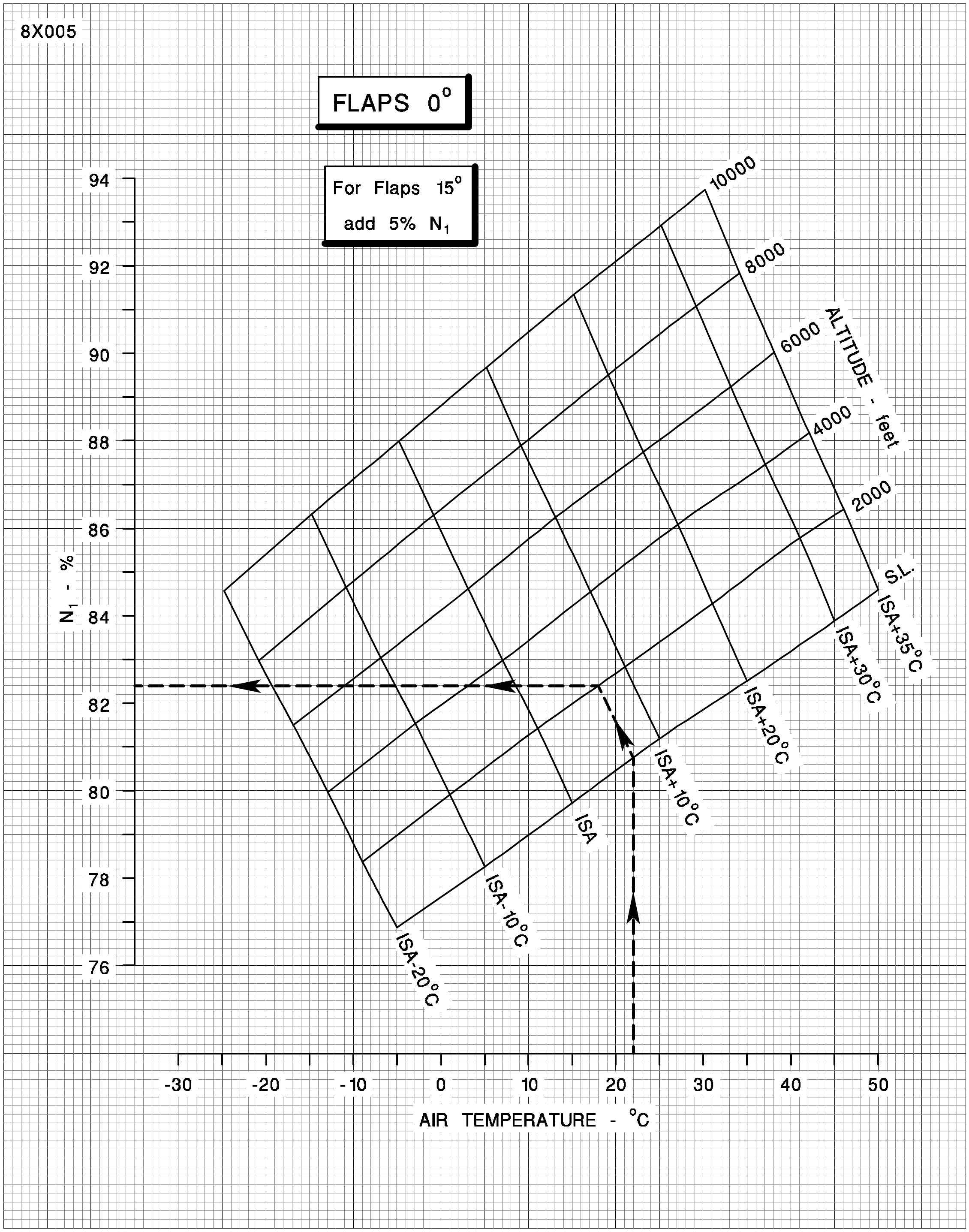

Figure 5.05.8

Associated Conditions

Engines	*Both engines operating*
Engine Bleed Air	*Air conditioning bleed on; see NOTE 1 for the effect of engine antice bleed.*
Flaps	*0° or 15° (See NOTE 2)*
Landing Gear	*Up*
Airspeed	*160 KIAS*

NOTES:

1. *When engine antice bleed is in use, add 0.5% N_1 to the % N_1 given by the chart.*
2. *For flaps 15°, add 5% N_1 to the % N_1 given by the chart.*
3. *The pressure altitude at which it is intended to reduce power must not be less than 1000 feet above the airfield altitude.*
4. *Below maximum take-off weight, the same RPM (% N_1) setting will result in a higher rate of climb than quoted above.*
5. *This technique is similar to that used in the noise abatement climb procedure used for type certification demonstration.*

Instructions for Use of Charts

To determine the % N_1 required:

- Determine the pressure altitude at which it is intended to reduce thrust i.e., field pressure altitude plus the height above the airfield level at which the thrust reduction is to commence.
- Enter the appropriate chart with the airfield temperature.
- Proceed vertically to the field pressure altitude.
- From this point move parallel to the nearest line of constant temperature relative to ISA until the pressure altitude for thrust reduction is reached. Read the % N_1 required.
- For temperatures below ISA -20° C, use the value of % N_1 appropriate to a temperature of ISA -20° C.

POSITION ERROR CORRECTIONS

The position error corrections (PEC) to both airspeed and altitude are given for the normal system acting through the air data computer (ADC) and AFD and also for the alternative system which is applicable to the ESIS airspeed and altitude. The flaps retracted curves below 160 KIAS and the flaps extended curves are not applicable to indicated altitudes greater than 14,000 ft.

Airspeed Correction for Take-off Ground Roll

The airspeed correction to be used during the takeoff while still on the ground is given in Figure 5.05.8A. This correction is to be made to IAS to obtain EAS.

Position and Compressibility Error Correction to Airspeed Indicator

The position and compressibility error correction to be made to IAS to obtain EAS is shown in Figure 5.05.9 for varying flap settings.

Position and Compressibility Error Correction to ESIS Airspeed

The residual position error correction to the IAS shown on the ESIS is given in Figure 5.05.10 for varying flap settings.

Static Position Error Correction to Altimeter

The residual position error correction to be made to the altitude shown on the primary altimeters to obtain true pressure altitude is given in Figure 5.05.11 for varying flap settings below 29,000 ft.

The static position error correction to altimeters at 29,000 ft and above is given in Figure 5.05.11A for all weights.

Static Position Error Correction to ESIS Altitude

The ESIS altitude is not corrected for position error. The position error correction to be made to this instrument to obtain true pressure altitude is given in Figure 5.05.12 for varying flap settings. The accuracy of this instrument is biased towards lower altitudes and is best at sea level. Observed readings have indicated an additional correction of as much as -500 feet may be required at high altitudes and airspeeds above 1.8 V_{STALL}. This figure does not account for instrument errors.

Correction to Indicated Mach Number

The residual position error correction to be made to the Mach Number, shown on the PFD, is given in Figure 5.05.13 for varying altitude. The corrections are insensitive to variations of weight and the curves apply to all weights.

Correction to Outside Air Thermometer

Accurate Outside Air Temperature (TAT, SAT and ISA deviation) is output from the Air Data Computers and can be displayed on the MFD, the FMS or a separate cockpit indicator, depending on the cockpit equipment installed.

If the analog outside air thermometer on the center pedestal is used, a correction must be applied to the indicated temperature to obtain the true temperature, this correction is shown in Figure 5.05.14.

The curves are based on a correction factor K = 0.7. If the outside air contains water droplets then K reduces (i.e. K<0.7) so that the instrument gives a lower temperature reading which is closer to the true air temperature. In such atmospheric conditions it is recommended that the ADC information be used to display the OAT.

AIRSPEED CORRECTION
TAKE-OFF GROUND ROLL
FLAPS UP AND 15°

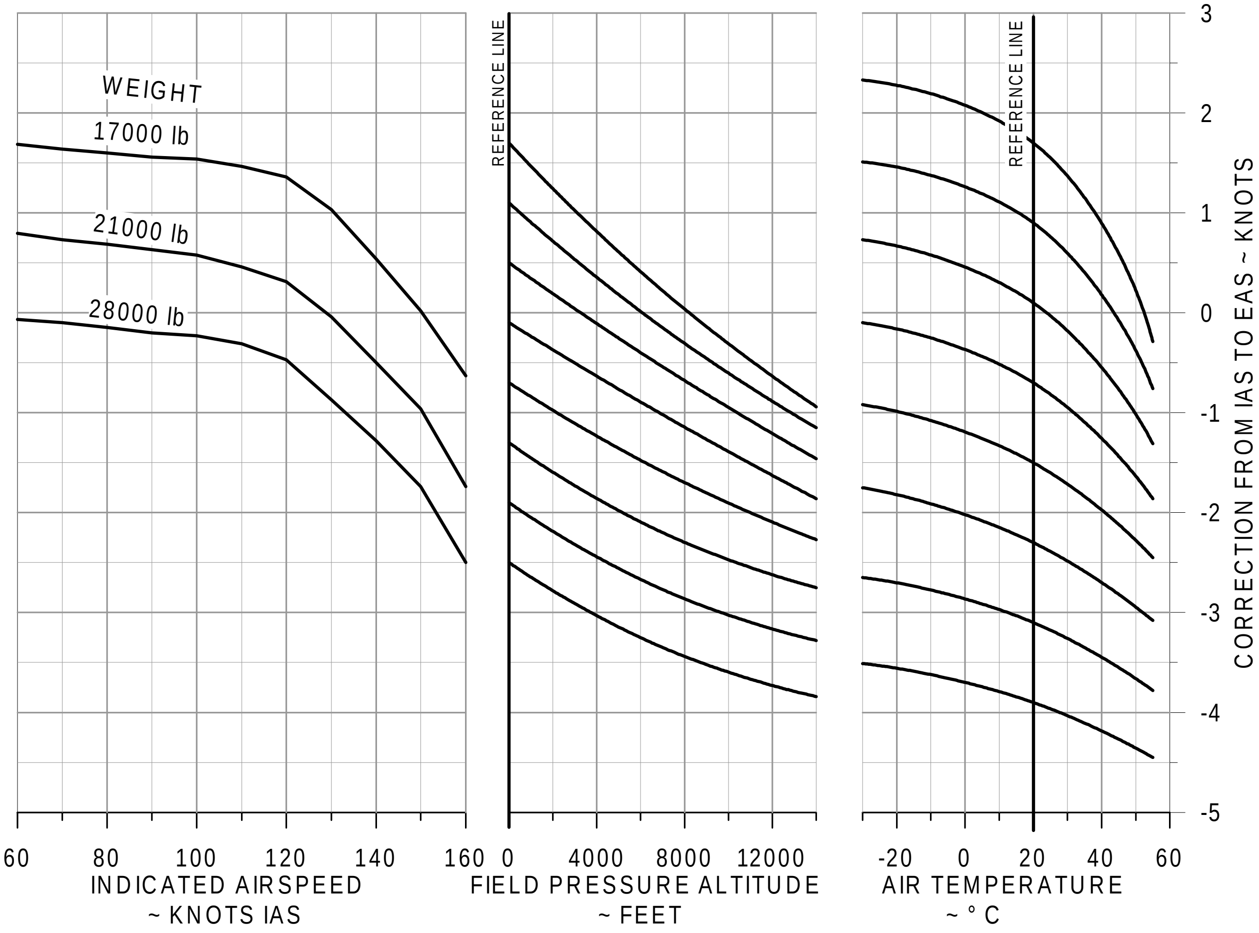

Figure 5.05.8A

POSITION AND COMPRESSIBILITY ERROR CORRECTION TO AIRSPEED INDICATOR

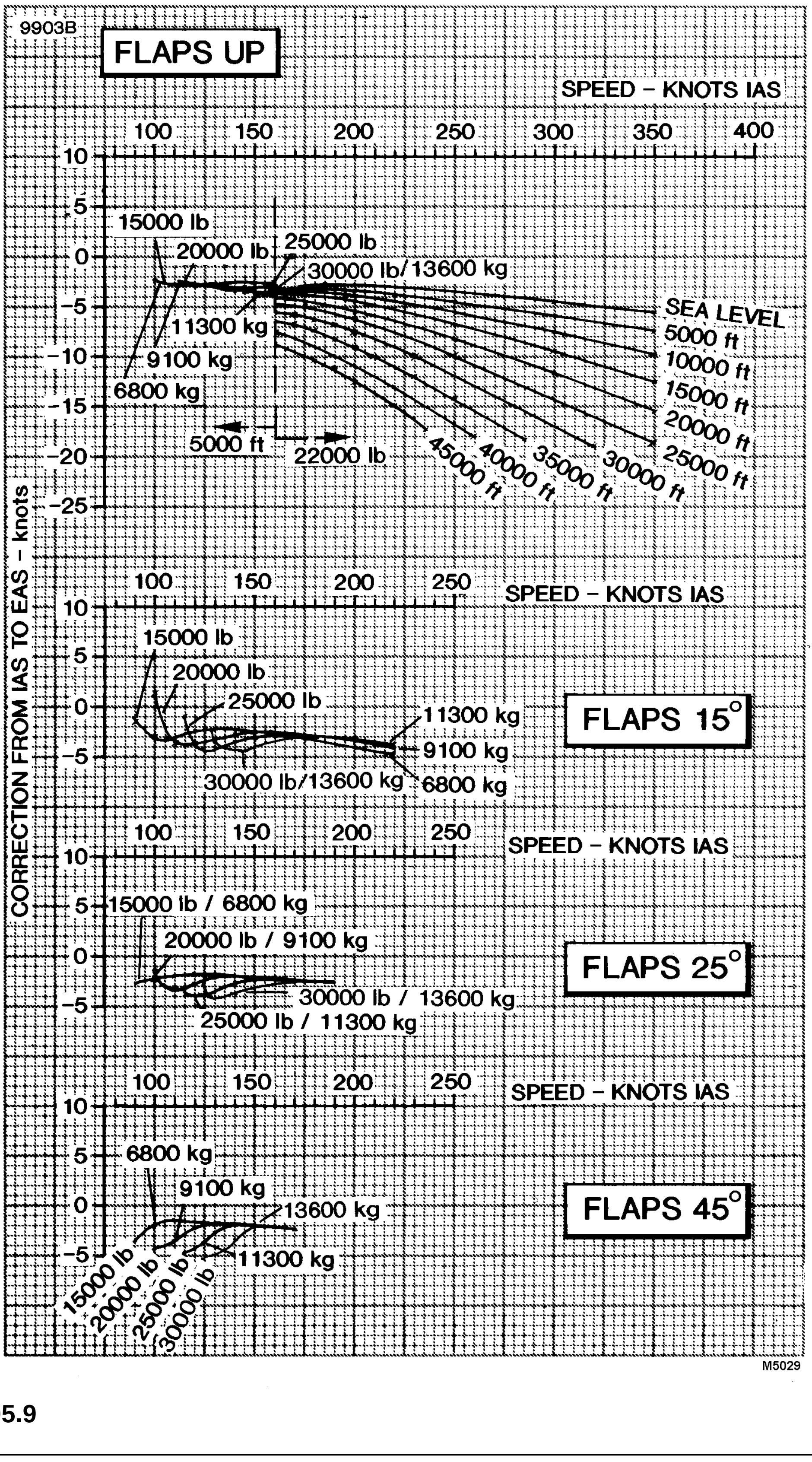

Figure 5.05.9

POSITION AND COMPRESSIBILITY ERROR CORRECTIONS TO ESIS AIRSPEED

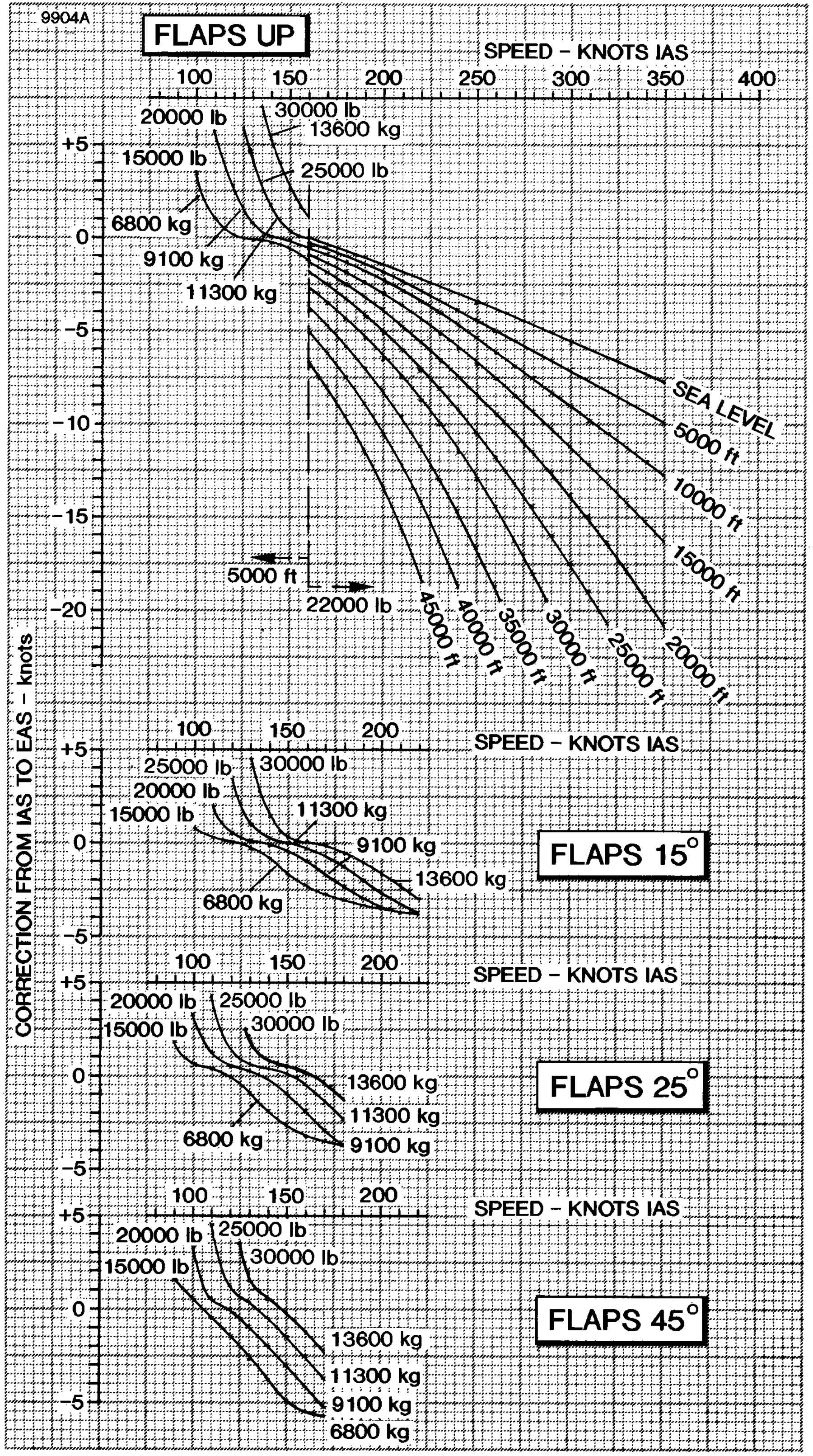

Figure 5.05.10

STATIC POSITION ERROR CORRECTION TO ALTIMETER BELOW 29000 FEET

NOTE: This chart not applicable at 29,000 ft and above. For altitudes of 29,000 ft and above, see Figure 5.05.11A.

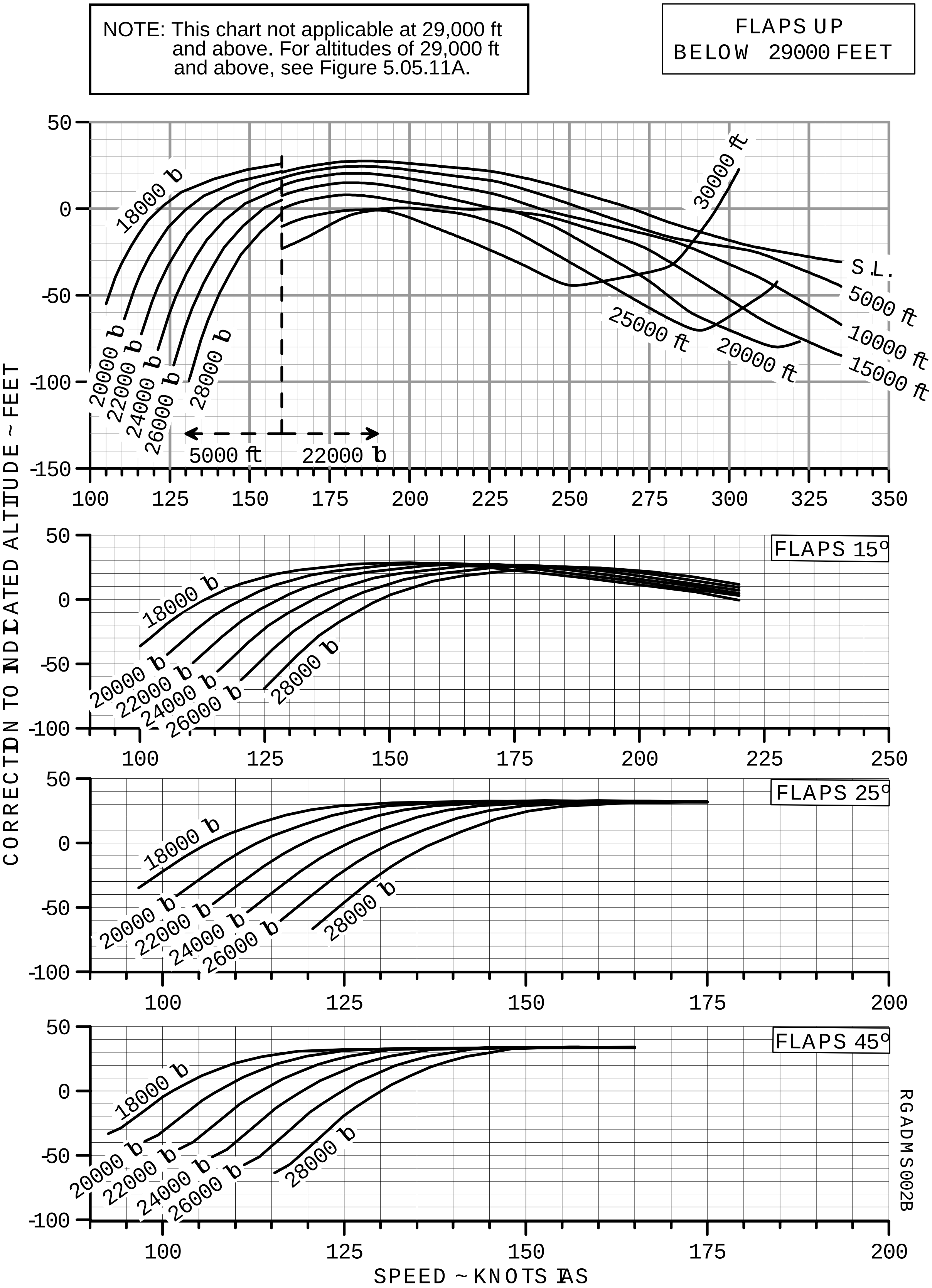

Figure 5.05.11

STATIC POSITION ERROR CORRECTION TO ALTIMETER

FLAPS UP
29000 FEET AND ABOVE

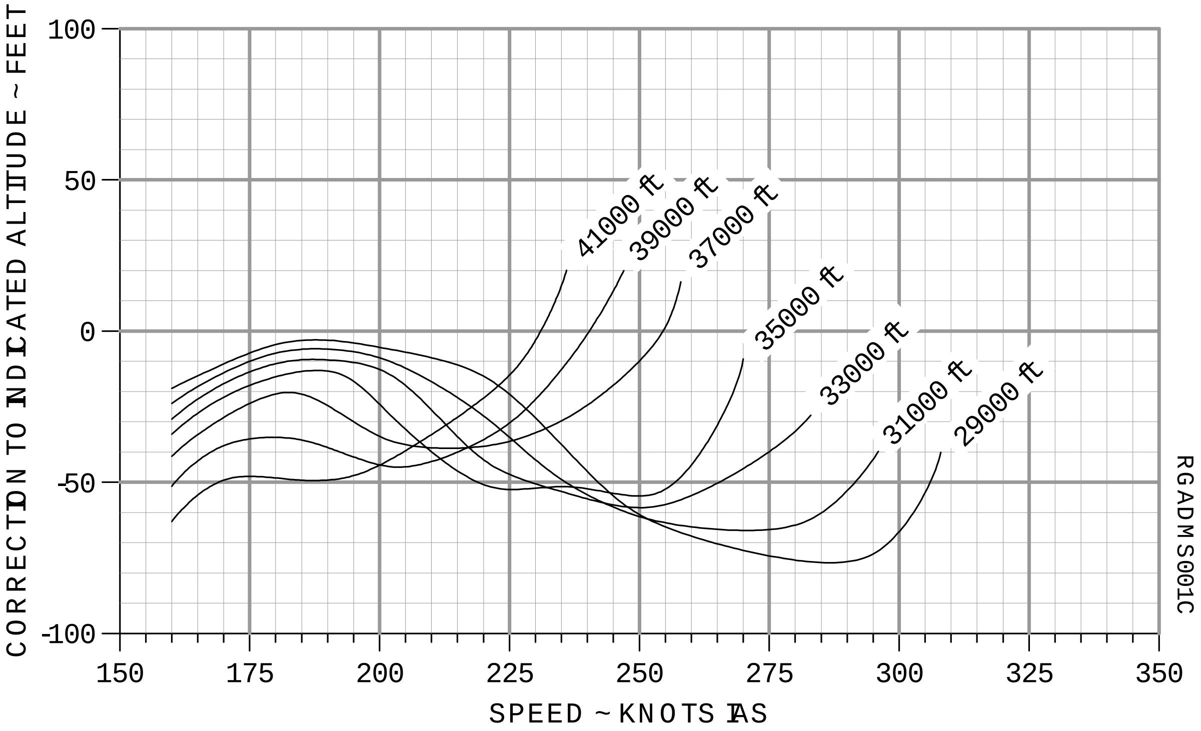

Figure 5.05.11A

STATIC POSITION ERROR CORRECTION TO ESIS ALTITUDE

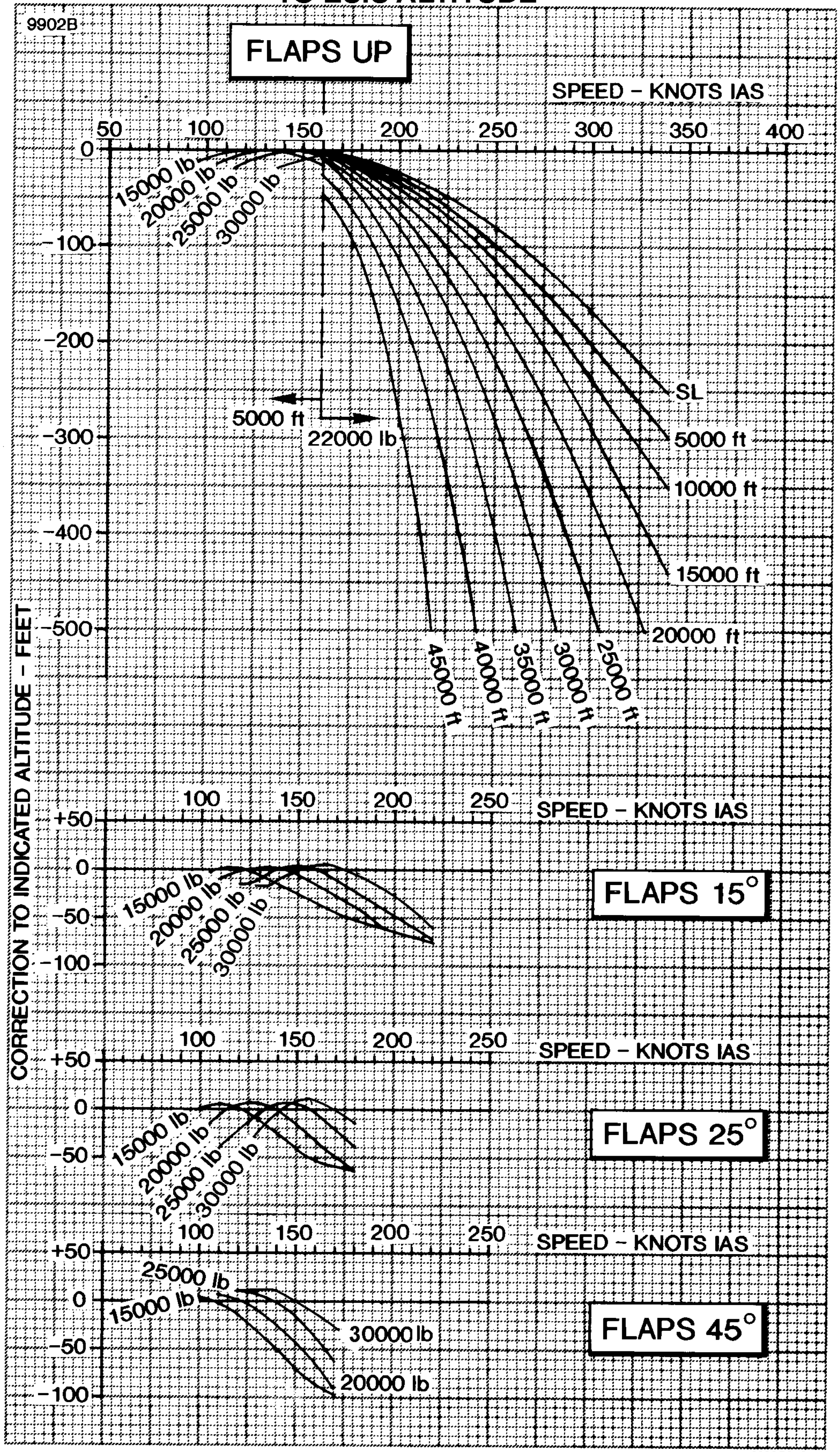

Figure 5.05.12

CORRECTION TO INDICATED MACH NUMBER

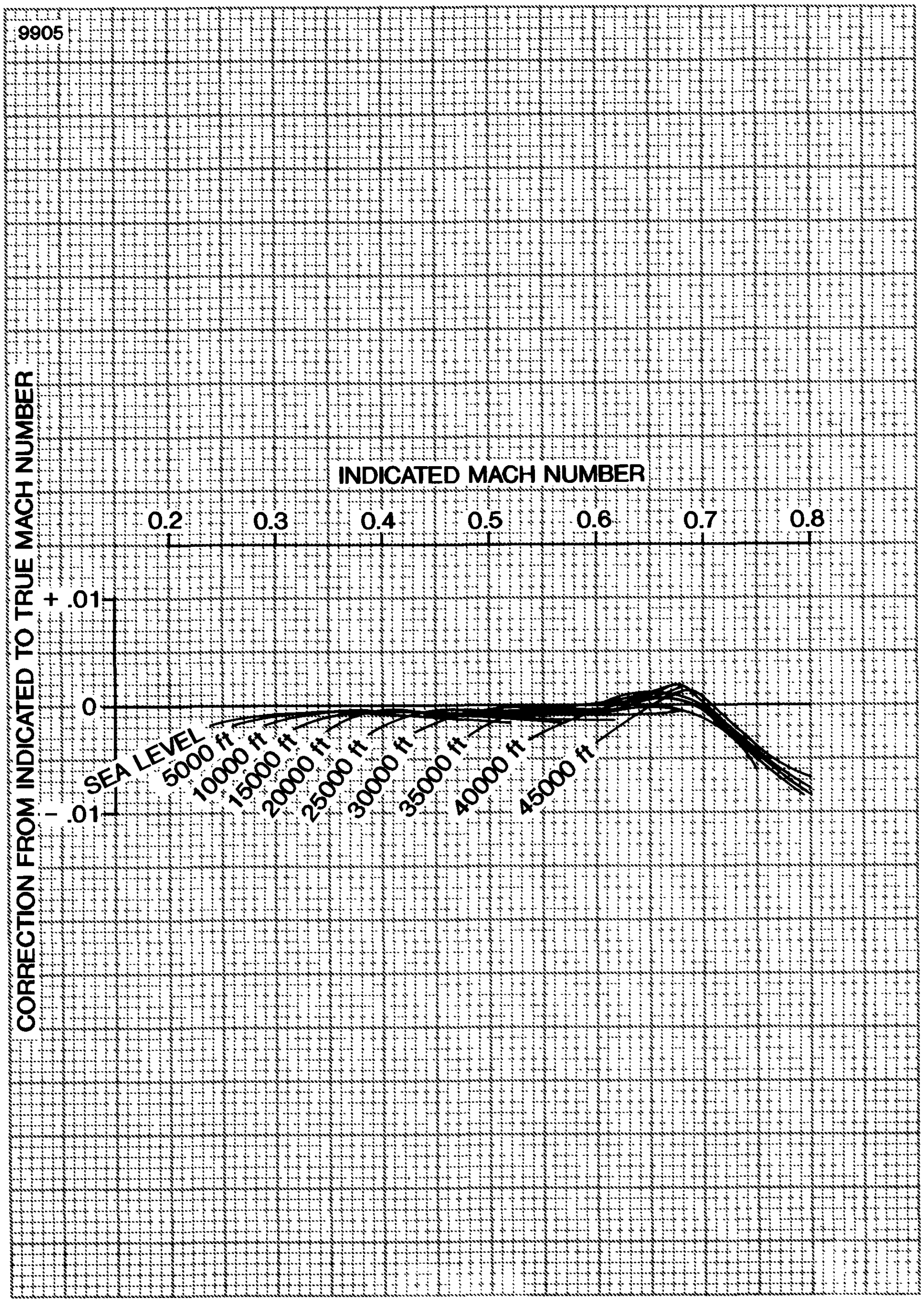

Figure 5.05.13

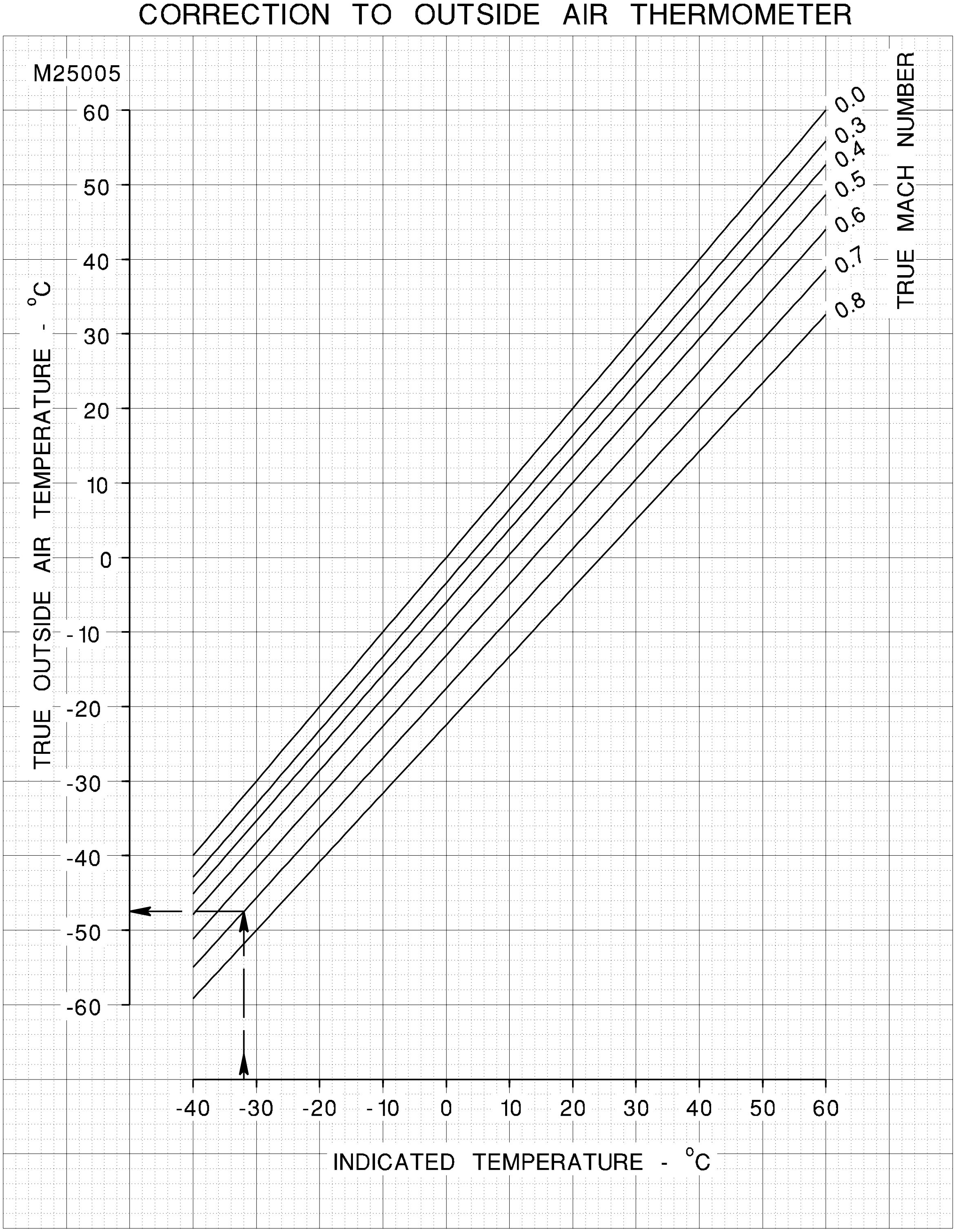

Figure 5.05.14

CONVERSION FACTORS

Parameter	*To Convert*	*Factor*
Temperature	°C to °F	Multiply by 9, divide by 5, add 32
	°F to °C	Subtract 32, multiply by 5, divide by 9
Weight	Kilograms (kg) to Pounds (lb)	Divide by 0.45359
	Pounds (lb) to Kilograms (kg)	Multiply by 0.45359
Length	Meters to Feet	Divide by 0.3048
	Feet to Meters	Multiply by 0.3048
	Millimeters to Inches	Divide by 25.4
	Inches to Millimeters	Multiply by 25.4
Volume	US Gallons to Liters	Multiply by 3.785
	Liters to US Gallons	Divide by 3.785
Pressure	lbf/in^2 (psi) to atmospheres (atm)	Divide by 14.696
	atm to psi	Multiply by 14.696
	psi to kPa	Divide by 0.14504
	kPa to psi	Multiply by 0.14504
	psi to bar	Divide by 14.504
	bar to psi	Multiply by 14.504
Speed	mph to kph	Divide by 0.6214
	kph to mph	Multiply by 0.6214
	kt to kph	Multiply by 1.852
	kph to kt	Divide by 1.852

°C – °F CONVERSION

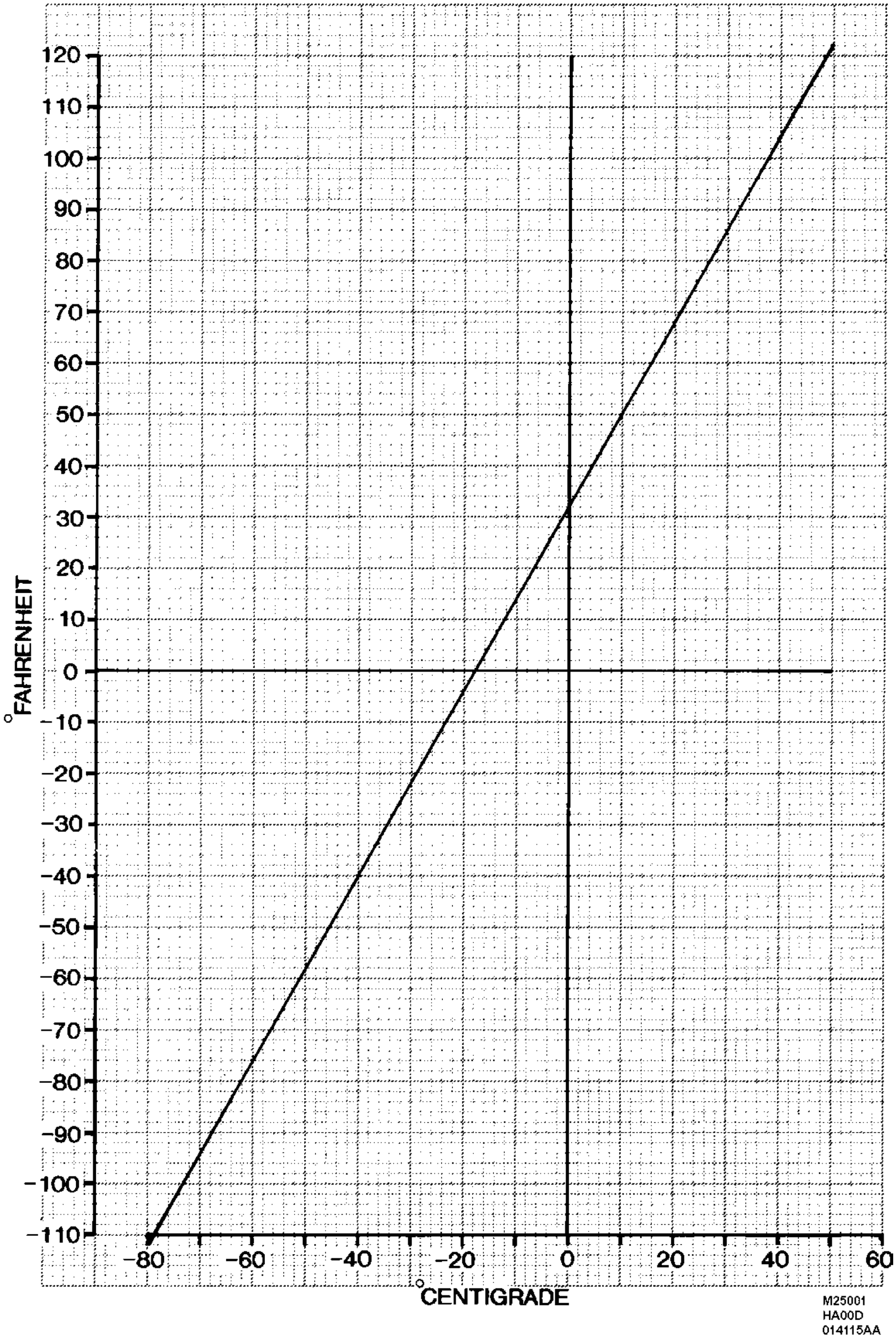

Figure 5.05.15

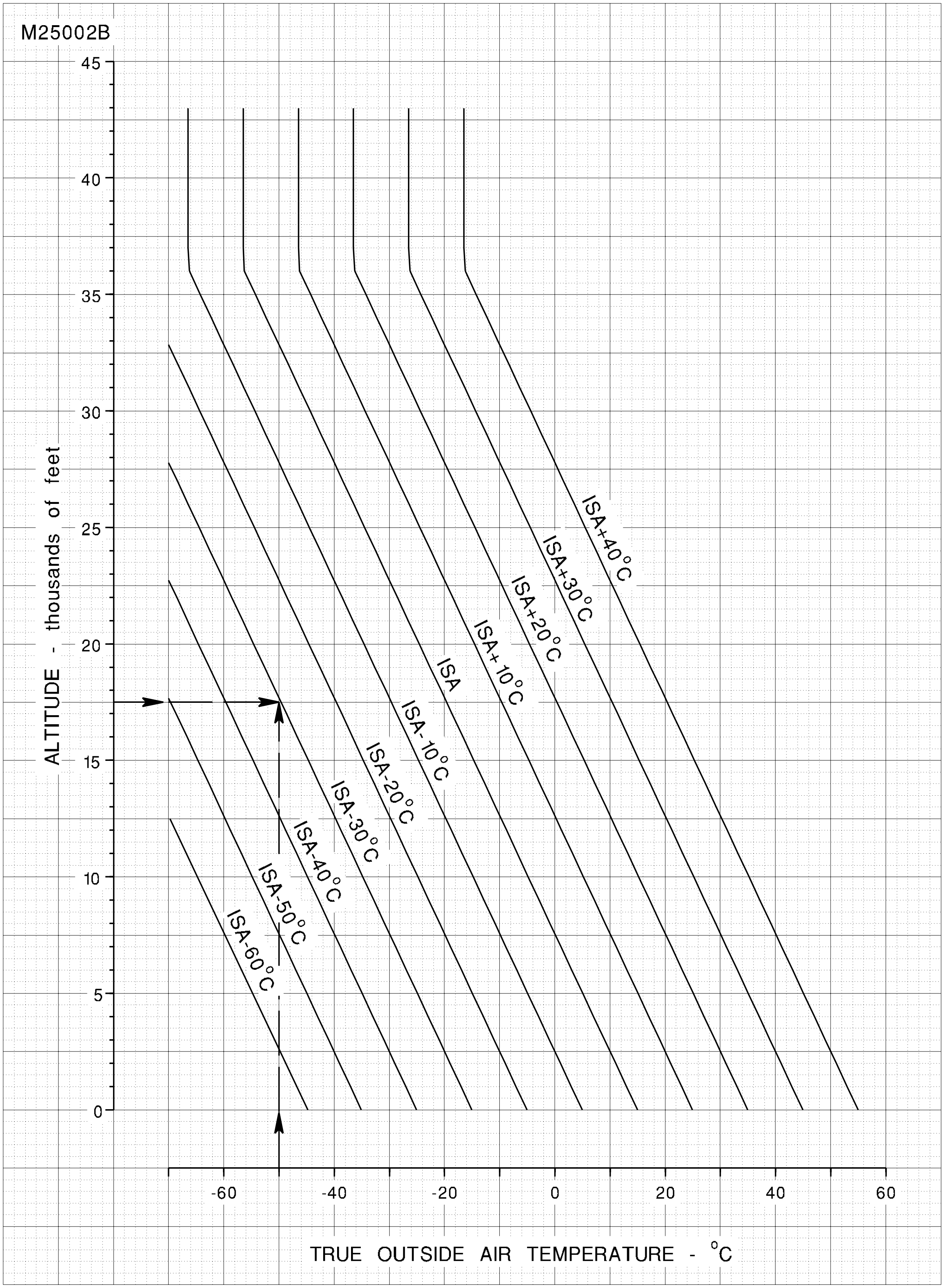

Figure 5.05.16

WEIGHT CONVERSION

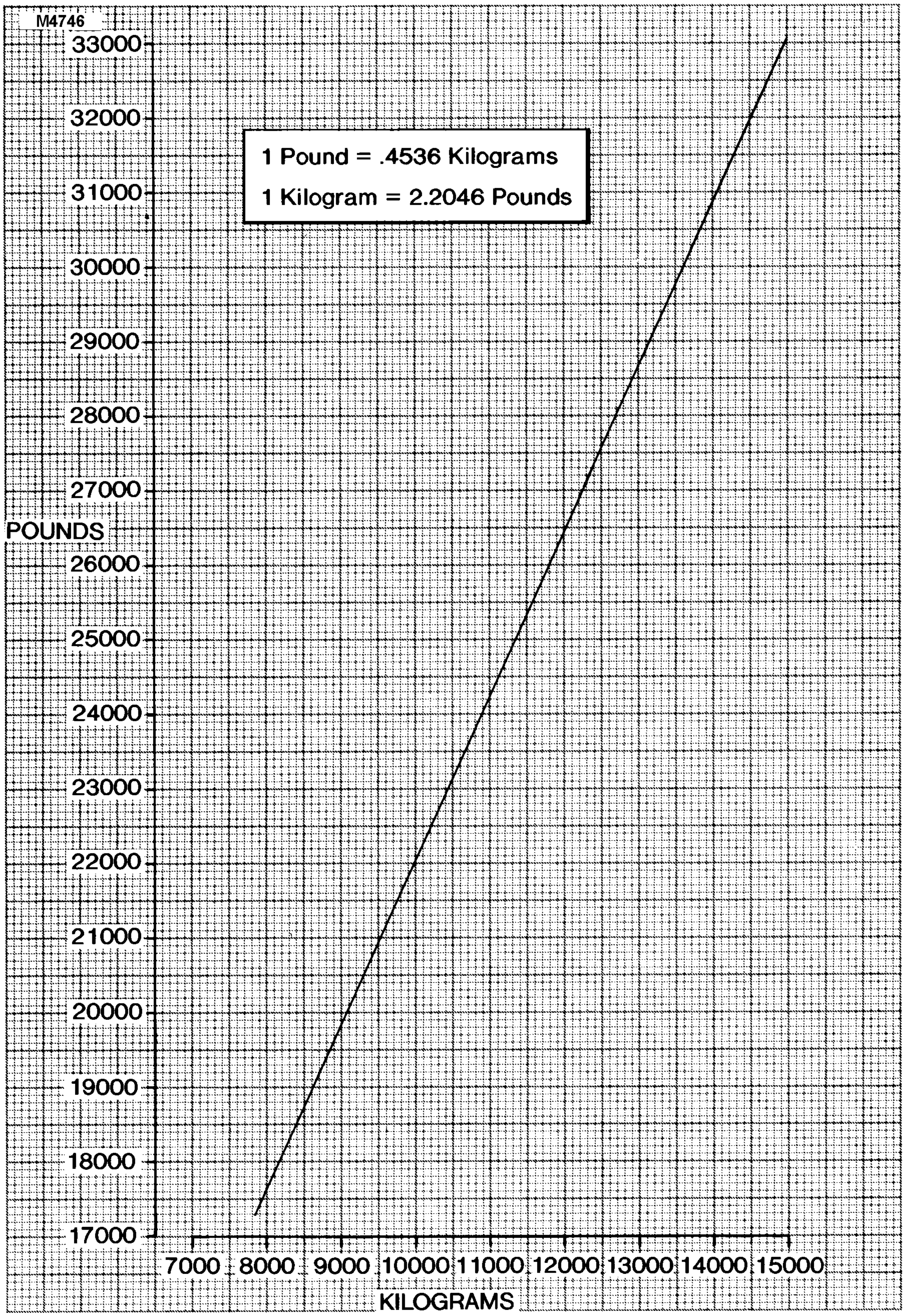

Figure 5.05.17

METERS - FEET CONVERSION

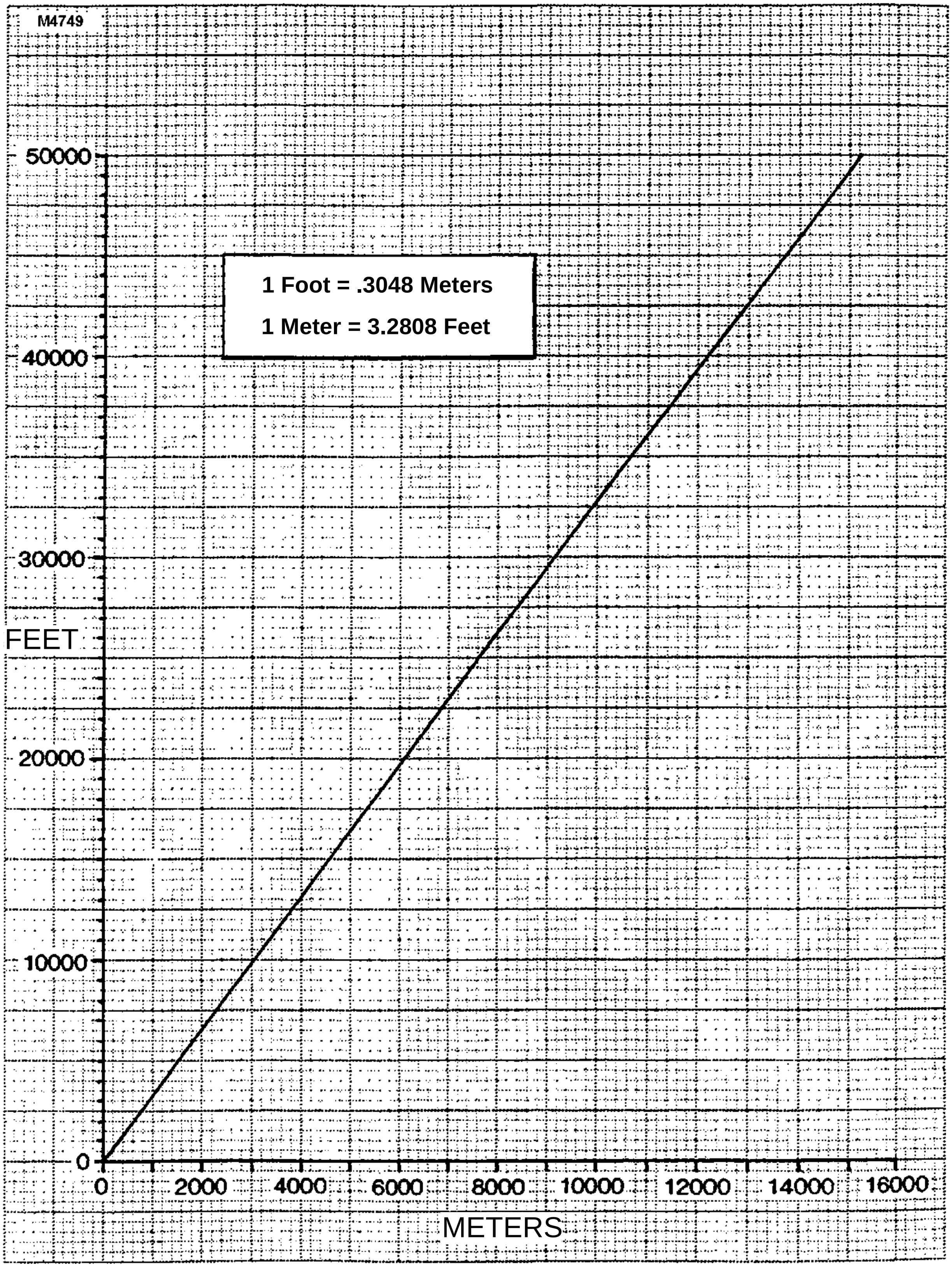

Figure 5.05.18

SUB-SECTION 5.10

OPERATING SPEEDS

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Hawker 800XP

TEMPORARY CHANGE

P/N 140-590032-0005TC14

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005, Dated Nov 30, 2001, or later revision for Hawker 800XP airplanes equipped with Pro Line 21 avionics.
AIRPLANE SERIAL NUMBERS AFFECTED:	Hawker 800XP 258541, 258556, 258567 and After.
DESCRIPTION OF CHANGE:	Revised text for the definition of V_{MCG} and V_1 speeds.
FILING INSTRUCTIONS:	Insert this Temporary Change Page 1 of 1 to face Page 3 in Section 5 - PERFORMANCE, Sub-section 5.10 - OPERATING SPEEDS.

SECTION 5 - PERFORMANCE

Sub-section 5.10 - OPERATING SPEEDS

DEFINITIONS

The definitions for V_{MCG} *and* V_1 *speeds are revised to read as follows:*

V_{MCG}	The minimum control speed after an engine failure on the ground during a continued takeoff with flaps 15° or 0° ranges from 87.5 KIAS to 113 KIAS, depending on temperature, altitude and weight conditions. This speed has been established without the assistance of nosewheel steering, the airplane having been rotated at the normal V_R.
V_1	The take-off decision speed (power failure recognition speed). The scheduled take-off decision speed is not less than V_{MCG} or greater than V_R in terms of calibrated airspeed.

All other speed definitions remain unchanged.

Approved By: DM Baker ....

for

Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: ....11/3/05..

INTRODUCTION

This Sub-section provides the operating speeds relevant to the certified performance of the airplane.

DEFINITIONS

V_{MCG}	The minimum control speed after an engine failure on the ground during a continued takeoff with flaps 15° or 0° is 115.5 KIAS at Sea Level, ISA conditions. This speed has been established without the assistance of nosewheel steering, the airplane having been rotated at the normal V_R.
V_{MCA}	The minimum control speed away from ground effect with flaps 15° is 108 KIAS and with flaps 0° is 114 KIAS at Sea Level, ISA conditions.
V_{MCL}	The minimum control speed with flaps 45°, is 105 KIAS. The minimum control speed with flaps 25°, is 106 KIAS.
V_{REF}	The landing reference speed. The speed at which the pilot should aim to cross the runway threshold with flaps at 45°. V_{REF} is shown in Figure 5.10.3.
V_1	The take-off decision speed (power failure recognition speed). The take-off decision speed must not be less than V_{MCG} or greater than V_R.
V_R	Rotation speed is the speed at which the pilot should initiate a change in the airplane attitude with the intention of leaving the ground. V_R is determined at low weights as 1.1 x minimum unstick speed. For flaps up, V_R is determined at higher weights by the need to achieve V_2 at 35 feet in the event of an engine failure. At high thrust conditions of low altitude and low temperature the minimum V_R requirements of minimum V_1 for flaps 15° or 1.05 V_{MCA} for flaps 0° are critical.
V_2	The take-off safety speed. V_2 is equal to V_R plus the increment in speed attained prior to reaching 35 feet with an engine failure. For flaps up, V_2 is equal to the speed necessary to achieve a second segment climb gradient of 2.4%, if this is higher. At high thrust conditions, V_2 is related to V_{MC}.
V_{FTO}	The final take-off climb speed V_{FTO} is shown in Figure 5.10.1.
V_{ERC}	The en-route climb speed V_{ERC} is shown in Figure 5.10.2.
V_S	Various scheduled speeds are based on the power off stalling speed (Defined as the minimum speed in a stall). V_S is shown in Figure 5.10.4 in terms of Equivalent Air Speed (EAS).

NOTE: At higher altitudes and/or temperatures, the values of V_{MCG} , V_{MCA} and V_{MCL} decrease.

INSTRUCTIONS FOR USE OF CHARTS

To Determine V_1, V_R and V_2 Speeds

- Refer to TABULATED TAKEOFF DATA Sub-section 5.20.

To Determine Final Take-Off Climb Speed (V_{FTO})

- Enter Figure 5.10.1 with the airplane weight.
- Move up the chart and intersect the curve.
- Move horizontally across the chart and read the FINAL TAKE-OFF CLIMB SPEED - knots IAS scale.

To Determine En-Route Climb Speed (V_{ERC})

- Enter Figure 5.10.2 with the airplane weight.
- Move up the chart and intersect the curve.
- Move horizontally across from the intersection and read the SPEED - knots IAS scale.

To Determine Landing Reference Speed (V_{REF})

- Enter Figure 5.10.3 with the airplane weight.
- Move up the chart and intersect the curve.
- Move horizontally across the chart and read the SPEED - knots IAS scale.

To Determine Power Off Stalling Speeds (V_S)

- Enter Figure 5.10.4 with the airplane weight.
- Move up and intersect the curve appropriate to the required configuration.
- Move horizontally across the chart to the reference line and then parallel with the guidelines to the field pressure altitude intersection.
- Move horizontally across the chart from the intersection of the field pressure altitude and read the STALLING SPEED - knots EAS from the right hand scale.

NOTE: V_S is determined at the forward center of gravity limit, including the variation with weight, as given in Section 2 - LIMITATIONS Figures 2.1 and 2.2. V_S will decrease as the center of gravity moves aft.

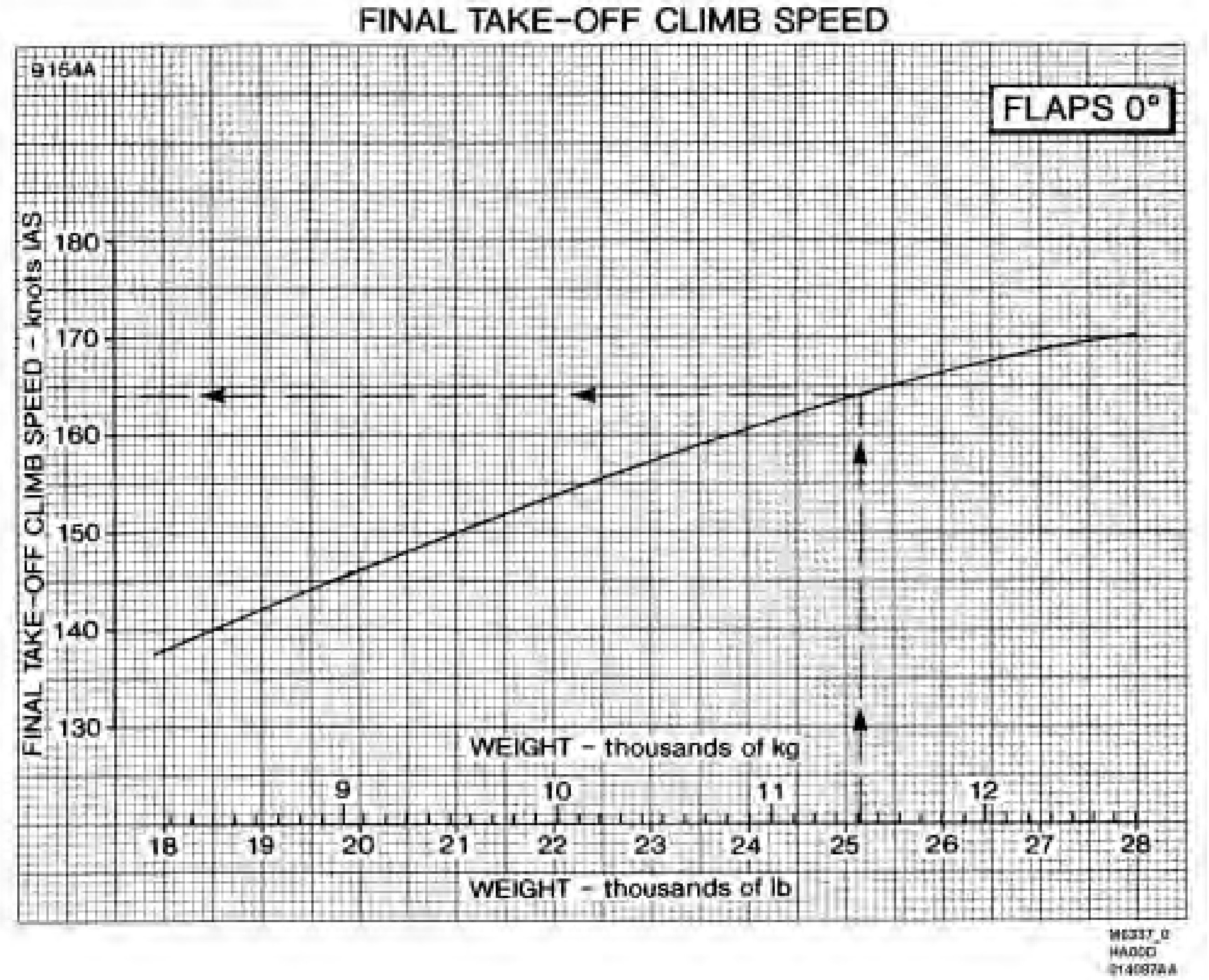
FINAL TAKE-OFF CLIMB SPEED
9154A
FLAPS 0°
FINAL TAKE-OFF CLIMB SPEED - knots IAS
180
170
160
150
140
130
WEIGHT - thousands of kg
9
10
11
12
18
19
20
21
22
23
24
25
26
27
28
WEIGHT - thousands of lb
M6337_0
HA00D
914087AA

Figure 5.10.1

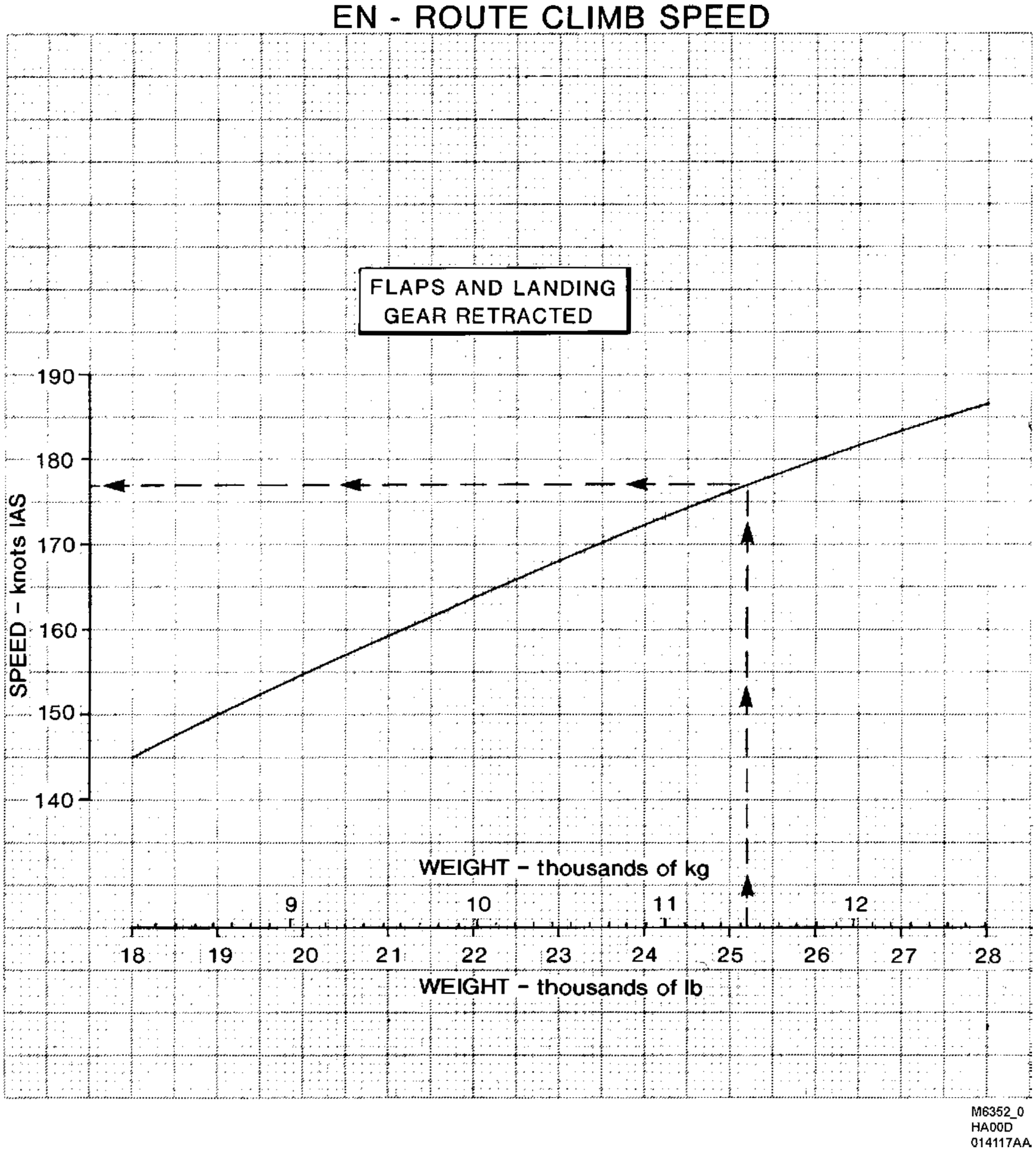
EN - ROUTE CLIMB SPEED
FLAPS AND LANDING GEAR RETRACTED
SPEED - knots IAS
190
180
170
160
150
140
WEIGHT - thousands of kg
9
10
11
12
18
19
20
21
22
23
24
25
26
27
28
WEIGHT - thousands of lb
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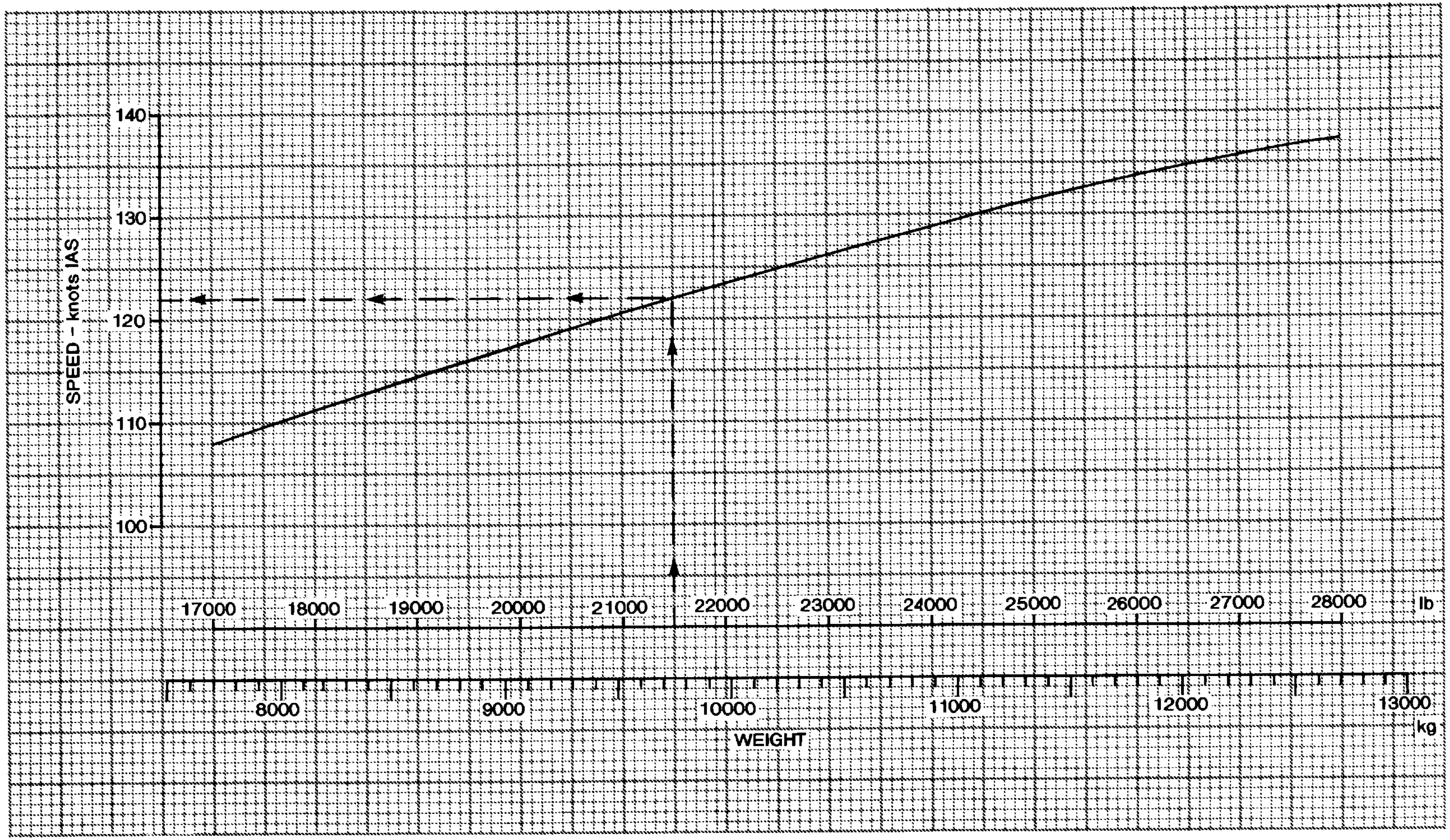
Figure 5.10.2

LANDING REFERENCE SPEED V REF



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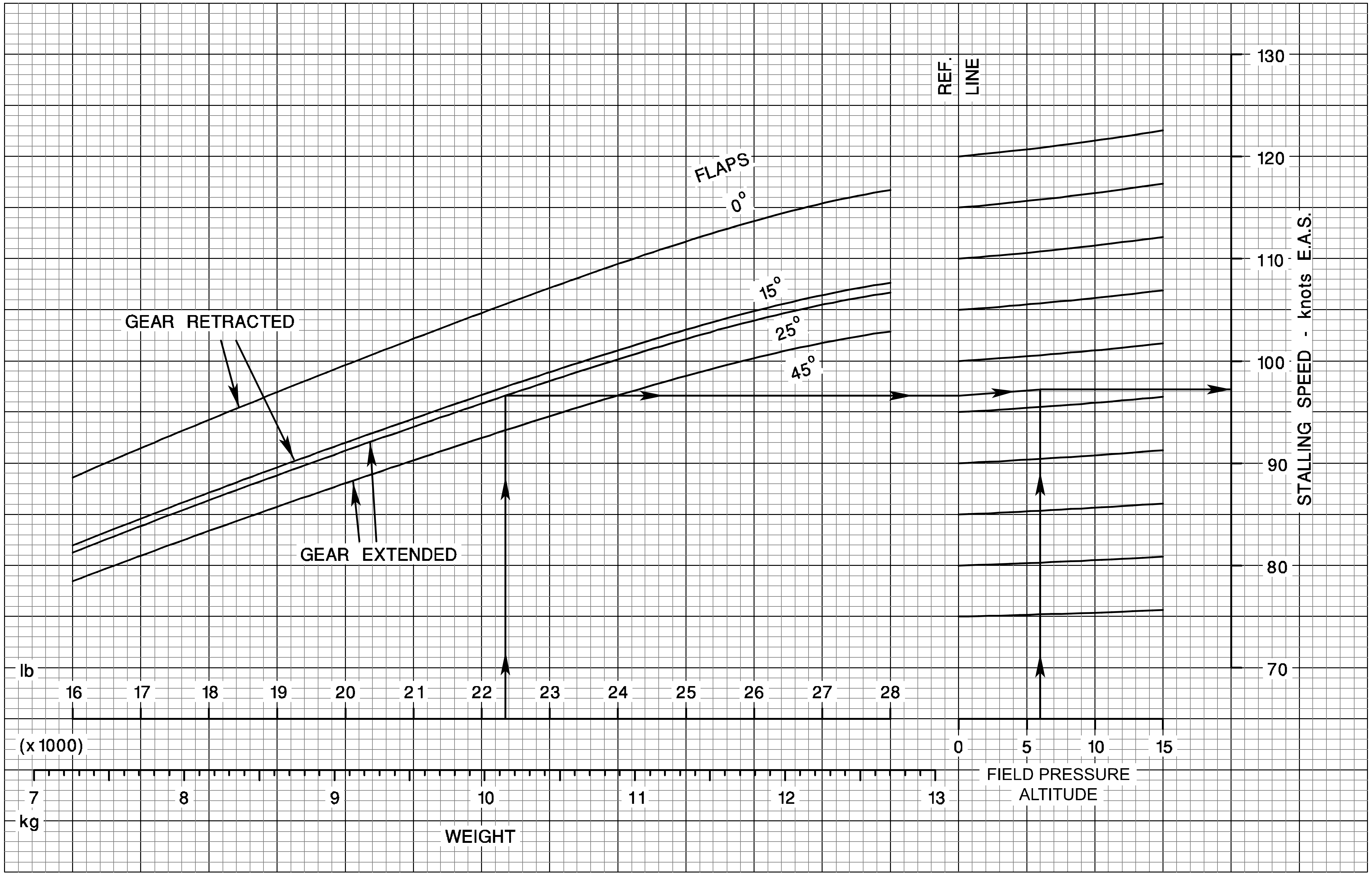
POWER OFF STALLING SPEEDS



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SUB-SECTION 5.15

TAKE-OFF WAT DATA

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INTRODUCTION

This Sub-section contains weight, altitude and temperature (WAT) data which limit the take-off weight of the airplane from a consideration of airworthiness climb requirements and tire speed limitations. The climb performance upon which the curves are based is given in Sub-section 5.55.

INSTRUCTIONS FOR USE OF CHARTS

To Determine the WAT Limit Required

- Determine the appropriate take-off WAT chart:

  Figure 5.15.1 provides weight, altitude, and temperature limits with Flaps 15°.
  Tire speed is never limiting with Flaps 15°.

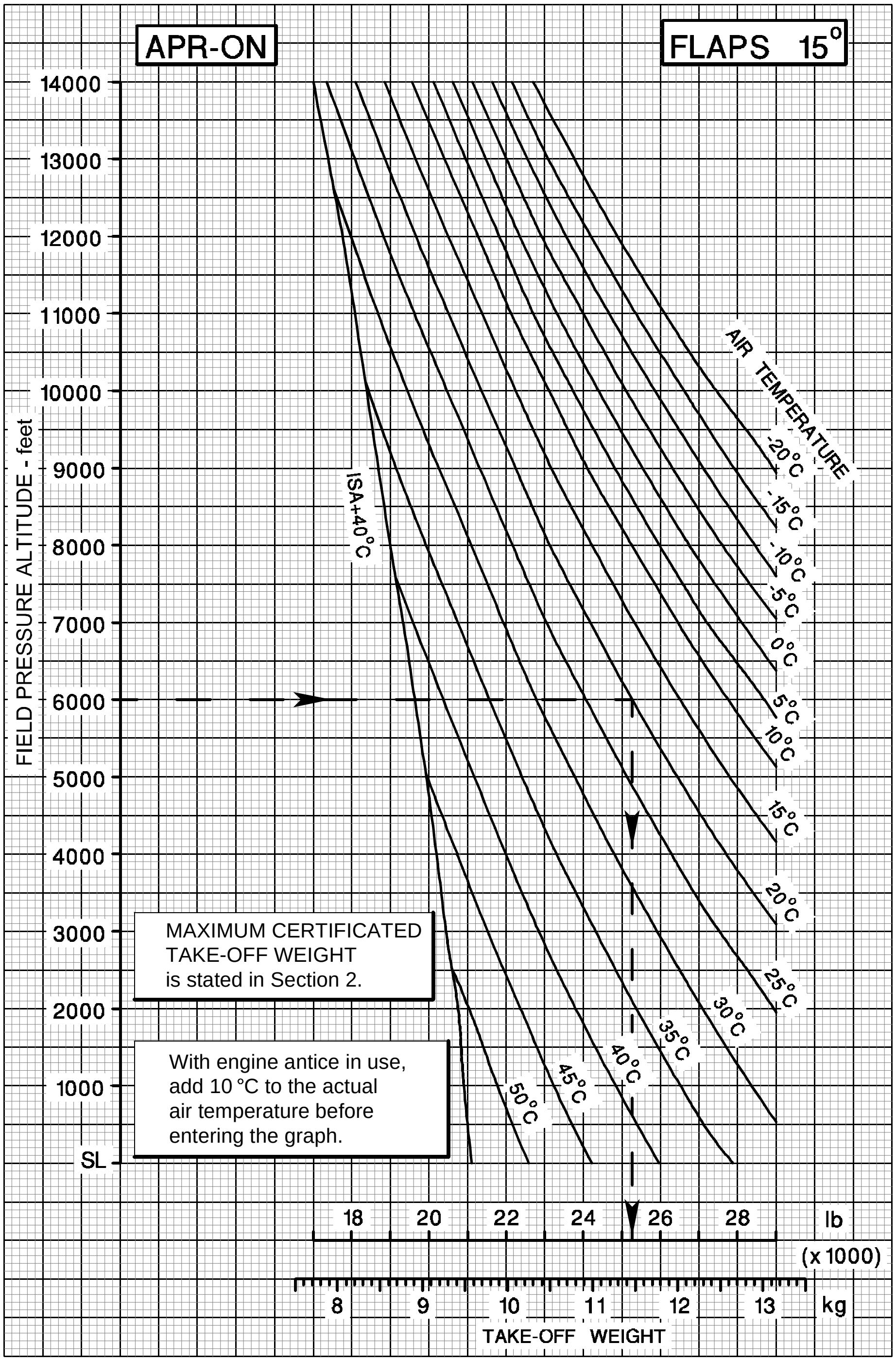
  Figure 5.15.2 provides weight, altitude, and temperature limits with Flaps 0° and tires limited to 210 mph.

- Enter the appropriate chart from the left with the field pressure altitude. Move across to the air temperature.
- From the intersection of the air temperature and field pressure altitude, move down to read the maximum allowable take-off weight, from the bottom scale.

NOTES:

1. *To obtain the effect of engine antice on climb gradient, add 10 ^{o}C to the actual air temperature before entering the chart.*
2. *The maximum weight determined by other considerations such as available take-off field length must also be checked (see Sub-section 5.20).*

MAXIMUM TAKE-OFF WEIGHT FOR ALTITUDE AND TEMPERATURE



MAXIMUM CERTIFICATED TAKE-OFF WEIGHT is stated in Section 2.

With engine antice in use, add 10 °C to the actual air temperature before entering the graph.

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Figure 5.15.1

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MAXIMUM TAKE-OFF WEIGHT FOR ALTITUDE AND TEMPERATURE

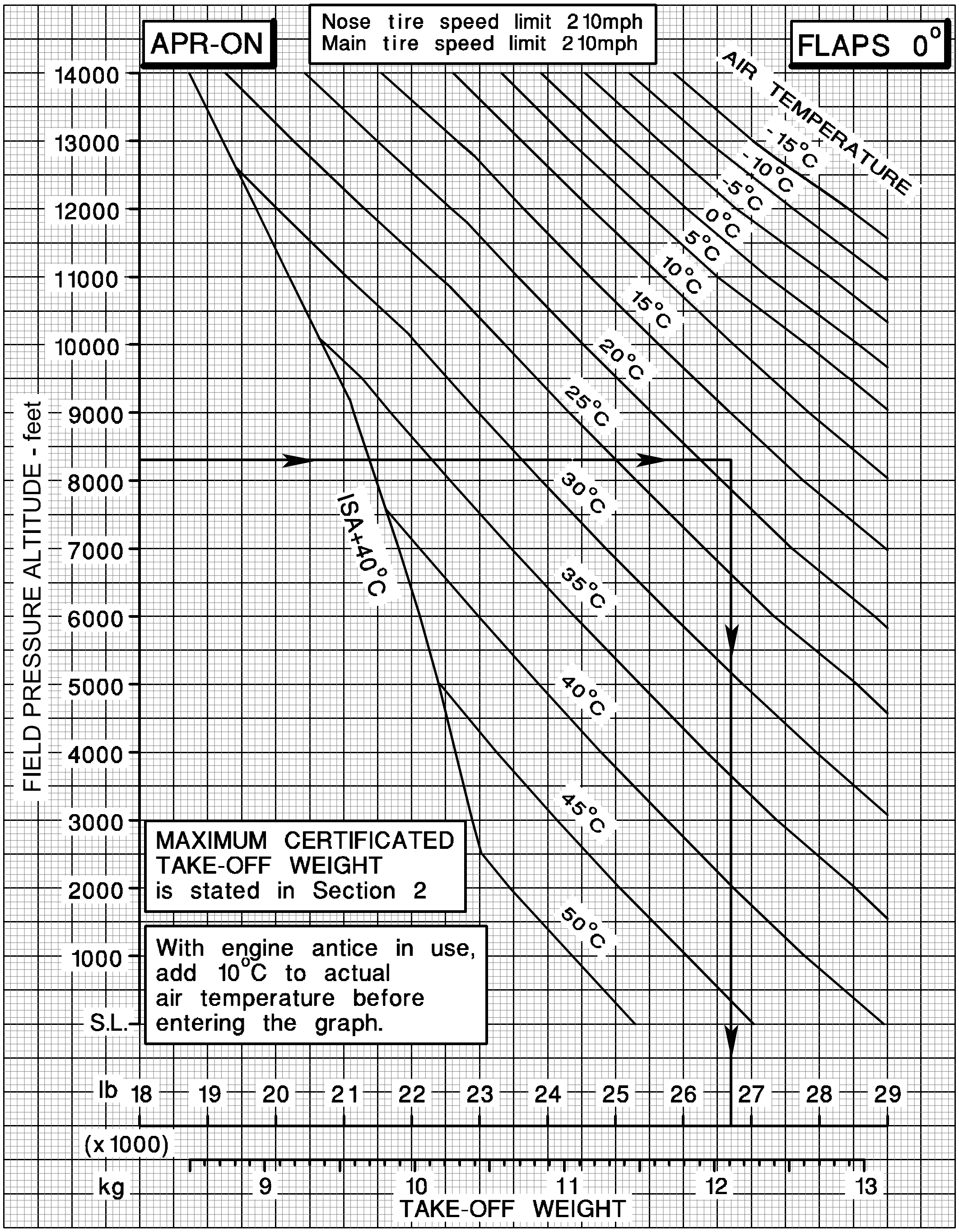

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Figure 5.15.2

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SUB-SECTION 5.20

TAKE-OFF FIELD LENGTH - APR ON

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INTRODUCTION

This Sub-section provides tabulated take-off data along with graphs to correct for the effects of runway gradient and wind.

The maximum take-off weight at a particular airfield may be restricted by some other performance criteria, such as the WAT limit, the net take-off flight path or en-route terrain clearance requirements. The actual take-off weight may therefore have to be less than that permitted solely by consideration of the take-off field length.

INSTRUCTIONS FOR USE OF TABLES AND CHARTS

Figure 5.20.1 provides the maximum take-off weight limited by maximum brake energy for take-offs with flaps set to 0°. Brake energy is never a limiting factor for take-offs with flaps set to 15°.

The speeds V_1, V_R, V_2 and the Take-Off Field Length (in feet) with the flaps set to 0° at various Field Pressure Altitudes are given in Figures 5.20.2 thru 5.20.16. Figure 5.20.17 gives the take-off field length correction with the flaps set to 0°. Figure 5.20.18 gives the take-off decision speed (V_1) correction with the flaps set to 0°.

The speeds V_1, V_R, V_2 and the Take-Off Field Length (in feet) with the flaps set to 15° at various Field Pressure Altitudes are given in Figures 5.20.19 thru 5.20.33. Figure 5.20.34 gives the take-off field length correction with the flaps set to 15°. Figure 5.20.35 gives the take-off decision speed (V_1) correction with the flaps set to 15°.

To use the Take-Off Field Length Correction graphs (0° and 15° Flaps settings) enter the appropriate graph on the left at the uncorrected take-off field length and move across to the reference line. Follow the correction lines to the runway slope % (uphill, as shown by the example line, downhill, come back to the relevant %) then move across to the reported wind component reference line. Follow the correction lines to the reported wind component (tailwind (-) or headwind) then move across and read the corrected take-off field length.

To use the Take-Off Decision Speed (V_1) Correction graphs (0° and 15° Flaps settings) enter the appropriate graph on the left at the uncorrected take-off decision speed (V_1) and move across to the reference line. Follow the correction lines to the runway slope % (uphill, as shown by the example line, downhill, come back to the relevant %) then move across to the reported wind component reference line. Follow the correction lines to the reported wind component (tailwind (-) or headwind) then move across and read the corrected take-off decision speed.

Shaded regions of the take-off speeds and field length tables represent conditions that exceed either the maximum allowable take-off temperature (ISA +35° C) or the WAT limit. These conditions are included for use in interpolation to intermediate conditions which may not be limited.

Associated Conditions

The performance is based on the following assumptions:

Engines	*Both engines are at take-off thrust with APR armed. Failure of the critical engine occurs at V_1.*
Engine Bleed Air	*Air conditioning bleed off; see NOTE 1 for the effect of engine antice bleed.*
Flaps	*Take-off setting, either 15° or 0°.*
Landing Gear	*UP selected after lift-off.*
Runway	*Hard dry.*

NOTES:

1. *To take account of engine antice on the take-off weight, add 10° C to the actual air temperature before entering the charts.*
2. *The wind grids are factored in such a way that an effect of not more than 50% of headwinds and not less than 150% of tailwinds is obtained. Reported winds may therefore be used directly in the wind grids. When a take-off is to be made into a headwind exceeding 40 kts, the charts are to be read at 40 kts.*

The following techniques have been assumed:

Normal Take-off	*Both engines are run up to normal take-off thrust with APR armed, and then the brakes are released. Rotation is initiated at VR.*
Engine Failure Rejected Take-off	*Failure of one engine is recognized at V_1. Both thrust levers are closed, maximum wheel braking using anti-skid is applied, airbrakes are opened and the airplane brought to a stop.* *NOTE: No reduction in stopping distance is credited for the use of reverse thrust.*
Engine Failure Continued Take-off	*Following the failure of one engine at V_1, maximum thrust is automatically set on the operating engine. Rotation is initiated at V_R and climb away is made to achieve V_2 appropriate to the flap setting at 35 ft.* *For field performance computations, the landing gear is selected UP 3 seconds after lift-off.*

Rolling Start Take-offs

Where rolling start take-offs are used, reduce all available field lengths by 100 ft when establishing take-off weight based on field length.

MAXIMUM TAKE-OFF WEIGHT LIMITED BY MAXIMUM BRAKE ENERGY
FLAPS 0°

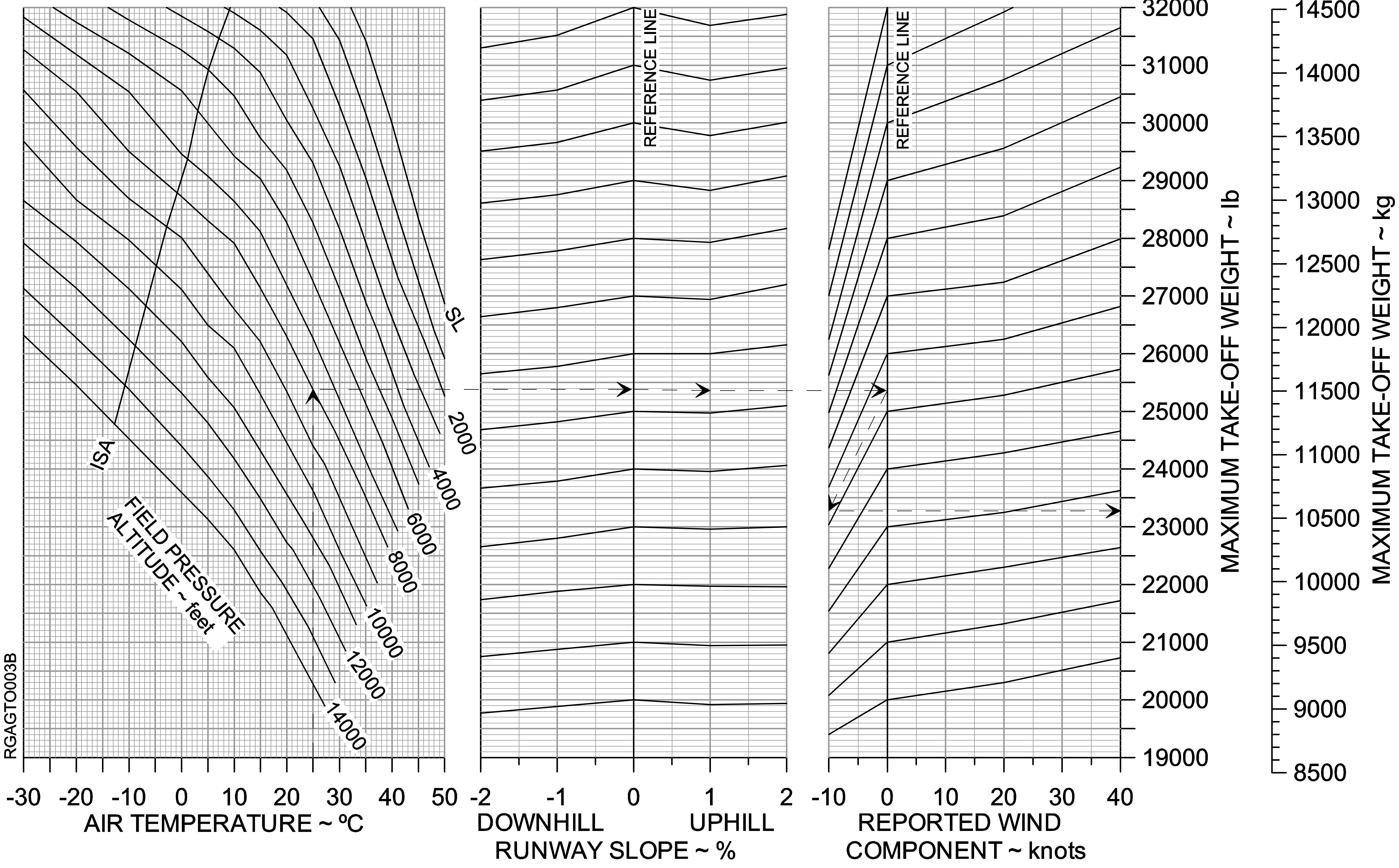

Figure 5.20.1

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Flaps 0° Field Pressure Altitude (Sea Level)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB **12,701 KG**	V1 ~ KIAS	128	127	127	127	127	127	127	127	127	127	127	127	129	131	133	146		
	VR ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	137	138	139	152		
	V2 ~ KIAS	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	156		
	TOFL ~ FT	4656	4720	4789	4864	4942	5022	5104	5188	5281	5377	5457	5647	6095	6640	7260	9580		
27,000 LB **12,247 KG**	V1 ~ KIAS	125	124	124	124	124	124	124	124	124	124	124	125	126	128	130	136	159	
	VR ~ KIAS	134	134	134	134	134	134	134	134	134	134	134	134	135	136	136	143	160	
	V2 ~ KIAS	143	143	143	143	142	142	142	142	142	142	142	142	142	142	142	146	163	
	TOFL ~ FT	4383	4444	4510	4579	4652	4726	4802	4880	4962	5049	5123	5301	5700	6202	6792	7987	12188	
26,000 LB **11,793 KG**	V1 ~ KIAS	121	121	121	121	121	121	121	121	121	121	121	121	123	125	127	129	143	
	VR ~ KIAS	131	131	132	132	132	132	132	132	132	132	132	132	132	133	134	135	150	
	V2 ~ KIAS	141	141	141	141	141	141	141	141	140	140	140	140	140	140	140	140	152	
	TOFL ~ FT	4111	4169	4231	4296	4364	4434	4505	4577	4655	4737	4806	4971	5339	5783	6339	6968	9350	
25,000 LB **11,340 KG**	V1 ~ KIAS	117	117	117	117	117	117	117	117	117	117	117	118	119	121	123	125	129	155
	VR ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	129	129	130	131	132	136	157
	V2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	137	137	137	137	139	159
	TOFL ~ FT	3813	3868	3923	3982	4045	4109	4175	4243	4315	4391	4455	4606	4942	5350	5835	6426	7321	11745
24,000 LB **10,886 KG**	V1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	115	117	119	121	123	135
	VR ~ KIAS	125	125	125	125	125	125	125	125	125	125	125	125	126	127	128	128	129	142
	V2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	134	134	134	134	134	145
	TOFL ~ FT	3516	3575	3633	3692	3751	3810	3868	3927	3986	4045	4103	4241	4554	4923	5352	5879	6490	8407
23,000 LB **10,433 KG**	V1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	113	115	117	119	121
	VR ~ KIAS	122	122	122	122	122	122	122	122	122	122	122	122	122	123	124	125	126	127
	V2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132	132
	TOFL ~ FT	3427	3483	3541	3599	3660	3720	3781	3843	3905	3971	4029	4144	4208	4513	4904	5360	5915	6497
22,000 LB **9979 KG**	V1 ~ KIAS	112	112	112	112	113	113	113	113	113	113	113	113	111	109	111	113	115	117
	VR ~ KIAS	119	119	119	119	119	119	119	119	119	119	119	119	119	120	120	121	122	123
	V2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	130	130	129	129	129	129	129
	TOFL ~ FT	3366	3421	3478	3535	3594	3654	3713	3773	3834	3897	3956	4048	4125	4133	4474	4885	5358	5900
21,000 LB **9525 KG**	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	113	111	109	107	109	111	113
	VR ~ KIAS	117	117	117	117	117	117	117	118	118	118	118	117	116	117	117	118	119	120
	V2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	129	129	127	127	126	126	126	126
	TOFL ~ FT	3305	3359	3415	3472	3529	3588	3646	3704	3764	3826	3883	3971	4041	4021	4081	4436	4856	5314
20,000 LB **9072 KG**	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	106	105	107	109
	VR ~ KIAS	117	117	117	117	117	117	117	117	117	117	117	117	116	114	114	114	115	116
	V2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	127	124	124	123	122	122
	TOFL ~ FT	3245	3298	3353	3408	3465	3522	3579	3636	3694	3754	3811	3895	3958	3909	3940	4032	4382	4787
19,000 LB **8618 KG**	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	104	103	104
	VR ~ KIAS	116	116	116	117	117	117	117	117	117	117	117	117	115	112	111	111	111	112
	V2 ~ KIAS	131	131	130	130	130	130	130	130	130	130	130	129	127	123	121	120	120	119
	TOFL ~ FT	3186	3239	3292	3347	3402	3458	3514	3570	3627	3685	3740	3820	3878	3825	3800	3743	3974	4297
18,000 LB **8165 KG**	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	101	101
	VR ~ KIAS	116	116	116	116	116	116	116	116	116	116	117	117	115	112	109	108	109	109
	V2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	130	130	128	123	120	118	117	117
	TOFL ~ FT	3130	3183	3235	3289	3343	3396	3451	3505	3561	3618	3672	3748	3799	3744	3714	3655	3746	3894
17,000 LB **7711 KG**	V1 ~ KIAS	111	111	111	111	111	111	112	112	112	112	112	112	111	108	105	102	99	97
	VR ~ KIAS	116	116	116	116	116	116	116	116	116	116	116	116	115	112	109	106	106	106
	V2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	130	128	124	120	116	115	114
	TOFL ~ FT	3076	3127	3178	3230	3284	3337	3390	3444	3498	3558	3618	3678	3723	3665	3631	3569	3519	3512

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Figure 5.20.2

Flaps 0° Field Pressure Altitude (1000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB 12,701 KG	V1 ~ KIAS	128	128	128	127	127	127	127	127	127	127	127	129	131	132	140	159		
	VR ~ KIAS	136	136	136	136	136	136	136	136	136	137	137	137	138	138	147	162		
	V2 ~ KIAS	144	144	144	144	144	144	144	144	144	144	144	144	144	144	151	164		
	TOFL ~ FT	4835	4901	4975	5051	5133	5218	5304	5390	5487	5580	5722	6097	6624	7223	8729	12639		
27,000 LB 12,247 KG	V1 ~ KIAS	125	125	125	124	124	124	124	124	124	125	125	126	128	130	131	147		
	VR ~ KIAS	134	134	134	134	134	134	134	134	134	134	134	135	135	136	137	153		
	V2 ~ KIAS	143	143	143	143	143	143	142	142	142	142	142	142	142	142	142	156		
	TOFL ~ FT	4551	4611	4679	4750	4826	4904	4982	5061	5153	5238	5370	5708	6186	6751	7372	10170		
26,000 LB 11,793 KG	V1 ~ KIAS	121	121	121	121	121	121	121	121	121	121	121	122	124	126	128	135	157	
	VR ~ KIAS	132	132	132	132	132	132	132	132	132	132	132	132	133	134	135	142	159	
	V2 ~ KIAS	141	141	141	141	141	141	141	141	141	140	140	140	140	140	140	145	161	
	TOFL ~ FT	4267	4325	4388	4455	4526	4600	4674	4749	4832	4914	5037	5345	5772	6297	6888	8150	12337	
25,000 LB 11,340 KG	V1 ~ KIAS	118	117	117	117	117	117	117	117	117	117	117	119	120	122	125	127	141	
	VR ~ KIAS	128	128	129	129	129	129	129	129	129	129	129	129	130	131	132	132	148	
	V2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	137	137	137	137	137	150	
	TOFL ~ FT	3956	4010	4069	4130	4196	4264	4333	4402	4479	4554	4668	4954	5338	5794	6347	6976	9460	
24,000 LB 10,886 KG	V1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	115	117	119	120	123	127	148
	VR ~ KIAS	125	125	125	125	125	125	125	125	125	125	125	126	127	127	128	129	133	152
	V2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	137	154
	TOFL ~ FT	3622	3680	3739	3800	3863	3926	3989	4055	4125	4193	4300	4567	4916	5328	5805	6391	7264	10981
23,000 LB 10,433 KG	V1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	113	115	116	119	121	131
	VR ~ KIAS	122	122	122	122	122	122	122	122	122	122	122	122	123	124	125	126	127	137
	V2 ~ KIAS	133	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132	132	140
	TOFL ~ FT	3542	3600	3659	3720	3783	3846	3909	3977	4044	4110	4208	4289	4509	4883	5304	5818	6426	8116
22,000 LB 9979 KG	V1 ~ KIAS	112	112	113	113	113	113	113	113	113	113	113	112	109	110	112	114	117	119
	VR ~ KIAS	119	119	119	119	119	119	119	119	119	119	119	119	120	120	121	122	123	124
	V2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	130	129	129	129	129	129	129
	TOFL ~ FT	3478	3535	3593	3653	3714	3776	3838	3899	3963	4027	4117	4205	4153	4454	4835	5284	5826	6406
21,000 LB 9525 KG	V1 ~ KIAS	112	112	112	112	112	112	112	113	113	113	113	112	109	107	108	110	112	114
	VR ~ KIAS	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	118	119	120
	V2 ~ KIAS	130	130	130	130	130	130	129	129	129	129	129	128	127	126	126	126	126	126
	TOFL ~ FT	3415	3471	3528	3587	3646	3707	3767	3827	3890	3953	4040	4121	4067	4077	4390	4790	5253	5782
20,000 LB 9072 KG	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	109	106	104	106	108	110
	VR ~ KIAS	117	117	117	117	117	117	117	117	117	117	117	116	114	114	114	115	116	116
	V2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	128	125	124	123	122	122	122
	TOFL ~ FT	3352	3407	3463	3521	3579	3638	3697	3756	3817	3878	3963	4038	3981	3987	4012	4323	4736	5182
19,000 LB 8618 KG	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	102	104	106
	VR ~ KIAS	116	117	117	117	117	117	117	117	117	117	117	116	112	111	111	112	112	113
	V2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	128	124	122	121	120	119	119
	TOFL ~ FT	3291	3345	3400	3456	3514	3571	3629	3687	3746	3806	3887	3957	3897	3897	3843	3945	4263	4646
18,000 LB 8165 KG	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	100	102
	VR ~ KIAS	116	116	116	116	116	116	117	117	117	117	117	116	112	110	108	109	109	109
	V2 ~ KIAS	131	131	131	131	131	130	130	130	130	130	130	128	124	121	119	118	117	116
	TOFL ~ FT	3233	3286	3339	3394	3450	3507	3563	3620	3678	3736	3814	3878	3815	3811	3754	3713	3875	4178
17,000 LB 7711 KG	V1 ~ KIAS	111	111	111	111	112	112	112	112	112	112	112	111	108	106	103	100	97	97
	VR ~ KIAS	116	116	116	116	116	116	116	116	116	116	117	116	112	110	107	106	106	106
	V2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	129	125	121	118	115	115	113
	TOFL ~ FT	3175	3227	3281	3335	3390	3445	3500	3556	3612	3668	3743	3801	3736	3727	3667	3622	3578	3746

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Figure 5.20.3

Flaps 0° Field Pressure Altitude (2000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB 12,701 KG	V1 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	130	132	135	150			
	VR ~ KIAS	136	137	137	137	137	137	137	137	137	137	137	138	138	142	156			
	V2 ~ KIAS	145	145	145	145	145	144	144	144	144	144	144	144	144	146	159			
	TOFL ~ FT	5022	5086	5163	5246	5332	5420	5511	5603	5705	5821	6152	6631	7207	8033	10980			
27,000 LB 12,247 KG	V1 ~ KIAS	125	125	125	125	125	125	125	125	125	125	126	127	129	131	140	164		
	VR ~ KIAS	134	134	134	134	134	134	134	134	135	135	135	136	136	137	147	163		
	V2 ~ KIAS	143	143	143	143	143	143	143	143	142	142	142	142	142	142	150	165		
	TOFL ~ FT	4723	4780	4852	4928	5008	5089	5172	5260	5353	5462	5763	6188	6729	7332	9058	14003		
26,000 LB 11,793 KG	V1 ~ KIAS	122	121	121	121	121	121	121	121	121	121	122	124	126	128	130	147		
	VR ~ KIAS	132	132	132	132	132	132	132	132	132	132	132	133	134	135	135	152		
	V2 ~ KIAS	141	141	141	141	141	141	141	141	141	141	140	140	140	140	140	155		
	TOFL ~ FT	4427	4484	4552	4623	4698	4774	4852	4931	5021	5123	5401	5779	6275	6842	7480	10547		
25,000 LB 11,340 KG	V1 ~ KIAS	118	118	117	117	117	117	117	118	118	118	119	120	122	124	126	132	156	
	VR ~ KIAS	129	129	129	129	129	129	129	129	129	129	129	130	131	132	132	139	157	
	V2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	142	159	
	TOFL ~ FT	4105	4157	4220	4286	4356	4426	4499	4573	4654	4749	5003	5351	5781	6305	6902	8129	12575	
24,000 LB 10,886 KG	V1 ~ KIAS	113	113	113	113	113	113	113	113	114	114	115	116	118	120	122	124	136	
	VR ~ KIAS	125	125	125	125	125	125	125	125	125	125	126	127	127	128	129	130	143	
	V2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	145	
	TOFL ~ FT	3764	3822	3885	3949	4014	4078	4144	4212	4286	4374	4613	4928	5315	5766	6319	6948	9114	
23,000 LB 10,433 KG	V1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	114	116	118	120	122	
	VR ~ KIAS	122	122	122	122	122	122	122	122	122	123	123	123	124	125	126	126	127	
	V2 ~ KIAS	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132	132	132	
	TOFL ~ FT	3664	3722	3785	3849	3914	3992	4057	4123	4194	4278	4418	4523	4874	5278	5750	6329	6975	
22,000 LB 9979 KG	V1 ~ KIAS	112	113	113	113	113	113	113	113	113	113	113	110	110	112	114	116	118	
	VR ~ KIAS	119	119	119	119	119	119	119	120	120	120	120	120	120	121	122	123	124	
	V2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	129	129	129	129	129	129	
	TOFL ~ FT	3597	3655	3716	3779	3842	3906	3971	4035	4103	4183	4332	4271	4452	4811	5233	5734	6332	
21,000 LB 9525 KG	V1 ~ KIAS	112	112	112	112	112	113	113	113	113	113	113	110	108	108	110	111	114	116
	VR ~ KIAS	118	118	118	118	118	118	117	117	117	117	117	117	117	117	118	119	120	121
	V2 ~ KIAS	130	130	130	130	130	130	129	129	129	129	129	128	127	126	126	126	126	126
	TOFL ~ FT	3531	3588	3648	3709	3771	3834	3897	3961	4026	4105	4246	4183	4184	4371	4747	5181	5705	6276
20,000 LB 9072 KG	V1 ~ KIAS	112	112	112	112	112	112	112	112	113	113	113	110	107	105	105	107	109	111
	VR ~ KIAS	117	117	117	117	117	117	117	117	117	117	117	114	114	114	115	115	116	117
	V2 ~ KIAS	130	130	130	130	130	130	130	130	130	129	129	125	124	124	123	123	123	123
	TOFL ~ FT	3465	3521	3580	3640	3701	3762	3824	3886	3951	4027	4160	4096	4092	4049	4303	4676	5122	5627
19,000 LB 8618 KG	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	102	103	105	107
	VR ~ KIAS	117	117	117	117	117	117	117	117	117	117	117	114	111	112	112	112	112	113
	V2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	129	125	122	121	121	120	119	119
	TOFL ~ FT	3401	3456	3514	3573	3633	3692	3753	3813	3876	3949	4076	4010	4002	3956	3929	4232	4594	5023
18,000 LB 8165 KG	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	101	100	101	102
	VR ~ KIAS	116	116	116	116	117	117	117	117	117	117	117	114	111	109	109	109	109	109
	V2 ~ KIAS	131	131	130	130	130	130	130	130	130	130	130	125	122	119	118	117	117	116
	TOFL ~ FT	3339	3394	3450	3508	3566	3625	3684	3743	3804	3875	3994	3927	3915	3865	3817	3848	4155	4486
17,000 LB 7711 KG	V1 ~ KIAS	111	111	112	112	112	112	112	112	112	112	112	109	107	104	101	99	97	98
	VR ~ KIAS	116	116	116	116	116	116	116	117	117	117	117	113	110	108	106	106	106	106
	V2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	130	126	122	119	116	115	114	113
	TOFL ~ FT	3277	3332	3388	3443	3499	3558	3615	3675	3734	3804	3916	3847	3812	3777	3725	3686	3748	3997

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Flaps 0° Field Pressure Altitude (3000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB 12,701 KG	V1 ~ KIAS	128	128	128	128	128	128	128	128	128	128	130	131	133	145	168			
	VR ~ KIAS	137	137	137	137	137	137	137	137	137	137	138	138	139	151	165			
	V2 ~ KIAS	145	145	145	145	145	145	145	144	144	144	144	144	144	155	167			
	TOFL ~ FT	5199	5278	5362	5450	5541	5636	5731	5833	5947	6251	6705	7214	7834	10031	15161			
27,000 LB 12,247 KG	V1 ~ KIAS	125	125	125	125	125	125	125	125	125	126	127	129	131	135	154			
	VR ~ KIAS	134	134	135	135	135	135	135	135	135	135	136	136	137	142	157			
	V2 ~ KIAS	143	143	143	143	143	143	143	143	143	142	142	142	142	146	160			
	TOFL ~ FT	4886	4960	5038	5119	5203	5290	5378	5472	5579	5855	6255	6736	7317	8362	12015			
26,000 LB 11,793 KG	V1 ~ KIAS	122	122	122	122	122	122	122	122	122	122	124	125	127	129	140			
	VR ~ KIAS	132	132	132	132	132	132	132	132	132	133	133	134	135	135	146			
	V2 ~ KIAS	141	141	141	141	141	141	141	141	141	140	140	140	140	140	149			
	TOFL ~ FT	4580	4649	4723	4799	4878	4962	5044	5131	5231	5486	5845	6277	6825	7435	9336			
25,000 LB 11,340 KG	V1 ~ KIAS	118	118	118	118	118	118	118	118	118	119	120	122	124	125	127	146		
	VR ~ KIAS	129	129	129	129	129	129	129	129	129	129	130	131	132	132	133	151		
	V2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	153		
	TOFL ~ FT	4246	4311	4379	4450	4523	4599	4676	4760	4853	5083	5409	5790	6285	6856	7497	10832		
24,000 LB 10,886 KG	V1 ~ KIAS	114	114	114	114	114	114	114	114	114	115	116	118	119	121	123	129	152	
	VR ~ KIAS	126	126	125	125	125	126	126	126	126	126	127	127	128	129	130	136	155	
	V2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	139	156	
	TOFL ~ FT	3880	3946	4036	4100	4167	4236	4306	4383	4469	4688	4987	5328	5757	6277	6873	8081	12426	
23,000 LB 10,433 KG	V1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	114	115	117	119	121	133	
	VR ~ KIAS	122	122	122	122	123	123	123	123	123	123	123	124	125	125	126	127	140	
	V2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	132	132	132	132	132	132	142	
	TOFL ~ FT	3783	3849	3939	4004	4071	4139	4207	4280	4363	4490	4576	4886	5267	5712	6260	6886	8992	
22,000 LB 9979 KG	V1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	110	110	111	113	115	117	119	
	VR ~ KIAS	119	119	120	120	120	120	120	120	120	120	120	120	121	122	123	124	124	
	V2 ~ KIAS	131	131	131	131	131	131	131	131	131	130	130	129	129	129	129	129	129	
	TOFL ~ FT	3714	3778	3843	3909	3975	4042	4109	4178	4257	4402	4368	4472	4807	5206	5666	6246	6879	
21,000 LB 9525 KG	V1 ~ KIAS	112	112	112	113	113	113	113	113	113	113	110	108	107	109	111	113	115	
	VR ~ KIAS	117	117	117	117	117	117	117	117	118	118	117	117	118	118	119	120	121	
	V2 ~ KIAS	129	129	129	129	129	129	129	129	129	129	127	127	126	126	126	126	126	
	TOFL ~ FT	3646	3708	3772	3836	3901	3967	4032	4099	4177	4315	4278	4272	4383	4721	5133	5618	6204	
20,000 LB 9072 KG	V1 ~ KIAS	112	112	112	112	112	112	113	113	113	113	110	108	106	105	107	108	110	
	VR ~ KIAS	117	117	117	117	117	117	117	117	117	117	114	114	115	115	115	116	117	
	V2 ~ KIAS	130	130	130	130	130	130	130	129	129	129	125	125	124	123	123	123	123	
	TOFL ~ FT	3577	3639	3701	3764	3828	3892	3956	4022	4097	4227	4189	4179	4161	4300	4628	5058	5554	
19,000 LB 8618 KG	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	113	110	108	105	103	103	104	106	
	VR ~ KIAS	117	117	117	117	117	117	117	117	117	117	114	112	112	112	112	112	113	
	V2 ~ KIAS	130	130	130	130	130	130	130	130	130	129	126	123	122	121	120	119	119	
	TOFL ~ FT	3511	3571	3632	3694	3756	3819	3881	3945	4018	4142	4102	4089	4067	4014	4212	4540	4967	
18,000 LB 8165 KG	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	108	105	102	101	101	102	
	VR ~ KIAS	116	116	116	117	117	117	117	117	117	117	114	112	109	109	109	109	109	
	V2 ~ KIAS	130	130	130	130	130	130	130	130	130	129	126	123	120	119	118	117	116	
	TOFL ~ FT	3446	3506	3566	3626	3687	3748	3809	3871	3942	4060	4017	4000	3975	3919	3998	4127	4460	
17,000 LB 7711 KG	V1 ~ KIAS	111	112	112	112	112	112	112	112	112	112	110	108	105	102	100	97	98	
	VR ~ KIAS	116	116	116	116	116	117	117	117	117	117	114	111	109	106	106	106	106	
	V2 ~ KIAS	131	131	131	131	131	131	130	130	130	130	126	123	120	117	116	114	113	
	TOFL ~ FT	3384	3443	3500	3558	3618	3680	3739	3800	3869	3980	3935	3915	3885	3826	3785	3887	3990	

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Figure 5.20.5

Flaps 0° Field Pressure Altitude (4000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB 12,701 KG	V1 ~ KIAS	128	128	128	128	128	128	128	128	129	130	131	133	140	157				
	VR ~ KIAS	137	137	137	137	137	137	137	137	137	138	139	139	147	160				
	V2 ~ KIAS	145	145	145	145	145	145	145	145	144	144	144	144	150	163				
	TOFL ~ FT	5391	5490	5581	5677	5777	5868	5963	6085	6377	6811	7302	7850	9328	13090				
27,000 LB 12,247 KG	V1 ~ KIAS	125	125	125	125	125	125	125	125	126	127	129	130	132	146				
	VR ~ KIAS	135	135	135	135	135	135	135	135	135	136	136	137	138	152				
	V2 ~ KIAS	143	143	143	143	143	143	143	143	142	142	142	142	142	155				
	TOFL ~ FT	5064	5155	5240	5329	5421	5505	5593	5704	5967	6352	6815	7325	7955	10584				
26,000 LB 11,793 KG	V1 ~ KIAS	122	122	122	122	122	122	122	122	123	124	125	127	129	133	153			
	VR ~ KIAS	132	132	132	132	133	133	133	133	133	133	134	135	135	140	157			
	V2 ~ KIAS	141	141	141	141	141	141	141	141	140	140	140	140	140	143	159			
	TOFL ~ FT	4749	4834	4914	4997	5083	5161	5244	5347	5592	5935	6349	6832	7421	8455	12473			
25,000 LB 11,340 KG	V1 ~ KIAS	118	118	118	118	118	118	118	118	119	120	121	123	125	127	138			
	VR ~ KIAS	129	129	129	129	129	129	129	130	130	130	131	132	132	133	144			
	V2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	138	138	147			
	TOFL ~ FT	4401	4481	4555	4633	4715	4788	4864	4960	5183	5495	5860	6291	6844	7462	9434			
24,000 LB 10,886 KG	V1 ~ KIAS	114	114	114	114	114	114	114	114	115	116	118	119	121	123	125	142		
	VR ~ KIAS	125	126	126	126	126	126	126	126	126	127	127	128	129	130	130	148		
	V2 ~ KIAS	136	136	135	135	135	135	135	135	135	135	135	135	135	135	135	150		
	TOFL ~ FT	4056	4129	4197	4268	4343	4409	4479	4570	4780	5068	5394	5770	6263	6838	7478	10649		
23,000 LB 10,433 KG	V1 ~ KIAS	113	113	113	113	113	113	114	113	113	112	114	115	117	119	121	126	151	
	VR ~ KIAS	123	123	123	123	123	123	123	123	123	123	124	125	125	126	127	133	154	
	V2 ~ KIAS	133	133	133	133	133	133	133	133	133	132	132	132	132	132	132	136	155	
	TOFL ~ FT	3948	4020	4089	4159	4232	4297	4366	4417	4568	4652	4948	5284	5708	6226	6821	7928	12685	
22,000 LB 9979 KG	V1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	110	111	113	115	117	118	129	
	VR ~ KIAS	120	120	120	120	120	120	120	120	120	120	120	121	122	123	123	124	135	
	V2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	129	129	129	129	129	129	138	
	TOFL ~ FT	3841	3912	3981	4051	4121	4186	4254	4334	4479	4473	4533	4825	5201	5642	6177	6791	8656	
21,000 LB 9525 KG	V1 ~ KIAS	112	112	113	113	113	113	113	113	113	111	108	107	109	110	112	114	116	
	VR ~ KIAS	117	117	117	117	117	117	118	118	118	118	118	118	118	119	120	121	121	
	V2 ~ KIAS	129	129	129	129	129	129	129	129	128	128	127	127	126	126	126	126	126	
	TOFL ~ FT	3770	3839	3907	3975	4044	4108	4174	4251	4390	4381	4358	4409	4722	5114	5561	6117	6738	
20,000 LB 9072 KG	V1 ~ KIAS	112	112	112	112	112	113	113	113	113	111	108	106	105	106	108	110	112	
	VR ~ KIAS	117	117	117	117	117	117	117	117	117	115	115	115	115	115	116	117	118	
	V2 ~ KIAS	130	130	130	130	130	129	129	129	129	126	125	124	124	123	123	123	123	
	TOFL ~ FT	3698	3766	3832	3900	3967	4030	4095	4169	4301	4289	4263	4263	4314	4615	5014	5476	6042	
19,000 LB 8618 KG	V1 ~ KIAS	112	112	112	112	112	112	112	113	113	110	108	106	104	102	104	105	107	
	VR ~ KIAS	117	117	117	117	117	117	117	117	117	115	112	112	112	112	112	113	114	
	V2 ~ KIAS	130	130	130	130	130	130	130	130	129	126	123	122	121	121	120	120	120	
	TOFL ~ FT	3629	3695	3760	3825	3891	3952	4015	4089	4215	4200	4171	4167	4172	4213	4522	4910	5376	
18,000 LB 8165 KG	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	102	100	101	103	
	VR ~ KIAS	116	116	117	117	117	117	117	117	117	115	112	110	109	109	109	110	110	
	V2 ~ KIAS	130	130	130	130	130	130	130	130	129	126	123	121	119	118	117	117	116	
	TOFL ~ FT	3562	3626	3690	3754	3818	3878	3940	4011	4130	4114	4081	4074	4030	4052	4110	4428	4799	
17,000 LB 7711 KG	V1 ~ KIAS	111	112	112	112	112	112	112	112	112	110	108	106	103	101	98	97	98	
	VR ~ KIAS	116	116	116	116	117	117	117	117	117	114	112	110	107	106	106	106	106	
	V2 ~ KIAS	131	131	131	130	130	130	130	130	130	127	124	121	118	116	115	114	113	
	TOFL ~ FT	3495	3557	3623	3685	3747	3806	3867	3936	4048	4028	3994	3983	3936	3891	3849	3982	4270	

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Figure 5.20.6

Flaps 0° Field Pressure Altitude (5000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB 12,701 KG	V1 ~ KIAS	128	128	128	128	128	128	128	129	130	131	133	137	151					
	VR ~ KIAS	137	137	137	137	137	137	137	138	138	139	139	144	156					
	V2 ~ KIAS	145	145	145	145	145	145	145	145	145	145	145	147	159					
	TOFL ~ FT	5599	5714	5809	5926	6010	6097	6233	6536	6955	7434	7955	8926	11923					
27,000 LB 12,247 KG	V1 ~ KIAS	125	125	125	125	125	125	125	126	127	129	130	131	140	161				
	VR ~ KIAS	135	135	135	135	135	135	135	135	136	137	137	138	147	162				
	V2 ~ KIAS	143	143	143	143	143	143	143	143	143	143	143	143	150	164				
	TOFL ~ FT	5256	5364	5452	5558	5636	5716	5843	6112	6485	6936	7421	7971	9759	14443				
26,000 LB 11,793 KG	V1 ~ KIAS	122	122	122	122	122	122	122	123	124	125	127	128	130	146				
	VR ~ KIAS	133	133	133	133	133	133	133	133	134	134	135	135	136	152				
	V2 ~ KIAS	141	141	141	141	141	141	141	141	141	141	141	141	141	154				
	TOFL ~ FT	4927	5029	5111	5209	5282	5357	5476	5726	6049	6460	6919	7430	8075	11052				
25,000 LB 11,340 KG	V1 ~ KIAS	118	118	118	118	118	118	118	119	120	121	123	125	126	131	154			
	VR ~ KIAS	129	129	129	130	130	130	130	130	130	131	132	132	133	138	156			
	V2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	138	141	158			
	TOFL ~ FT	4571	4665	4741	4832	4900	4970	5081	5312	5606	5962	6371	6851	7451	8514	13136			
24,000 LB 10,886 KG	V1 ~ KIAS	114	114	114	114	114	114	114	115	116	118	119	121	122	124	134			
	VR ~ KIAS	126	126	126	126	126	126	126	127	127	128	128	129	130	130	141			
	V2 ~ KIAS	136	136	136	135	135	135	135	135	135	135	135	135	135	135	144			
	TOFL ~ FT	4211	4298	4367	4453	4514	4578	4682	4897	5172	5488	5845	6268	6828	7441	9349			
23,000 LB 10,433 KG	V1 ~ KIAS	113	113	113	114	113	113	113	112	112	114	115	116	118	120	122	139		
	VR ~ KIAS	123	123	123	123	123	123	123	123	124	124	125	125	126	127	128	145		
	V2 ~ KIAS	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132	147		
	TOFL ~ FT	4093	4175	4245	4325	4346	4415	4511	4592	4747	5037	5354	5721	6213	6781	7420	10568		
22,000 LB 9979 KG	V1 ~ KIAS	113	113	113	113	113	113	113	112	110	110	111	112	114	116	118	122	143	
	VR ~ KIAS	120	120	120	120	120	120	120	120	120	121	121	122	123	123	124	128	146	
	V2 ~ KIAS	131	131	131	131	131	131	131	130	130	130	129	129	129	129	129	132	148	
	TOFL ~ FT	3975	4052	4123	4198	4265	4332	4426	4502	4513	4615	4891	5216	5635	6139	6732	7658	11773	
21,000 LB 9525 KG	V1 ~ KIAS	112	113	113	113	113	113	113	112	110	109	107	108	110	112	114	115	122	
	VR ~ KIAS	117	117	117	117	117	118	118	117	118	118	118	118	119	120	120	121	129	
	V2 ~ KIAS	129	129	129	129	129	129	129	128	128	127	127	126	126	126	126	126	132	
	TOFL ~ FT	3900	3976	4045	4119	4184	4250	4341	4413	4421	4439	4474	4736	5109	5536	6056	6660	8037	
20,000 LB 9072 KG	V1 ~ KIAS	112	112	112	112	113	113	113	112	110	108	107	104	106	107	109	111	113	
	VR ~ KIAS	117	117	117	117	117	117	117	117	115	115	115	115	115	116	117	117	118	
	V2 ~ KIAS	129	129	129	129	129	129	129	128	125	125	125	124	123	123	123	123	123	
	TOFL ~ FT	3826	3900	3968	4040	4104	4168	4256	4324	4329	4343	4354	4336	4633	4988	5433	5959	6563	
19,000 LB 8618 KG	V1 ~ KIAS	112	112	112	112	112	112	113	112	110	108	107	104	102	103	105	107	108	
	VR ~ KIAS	117	117	117	117	117	117	117	116	114	112	112	112	112	112	113	114	114	
	V2 ~ KIAS	130	130	130	130	130	130	129	128	126	123	122	122	121	120	120	120	120	
	TOFL ~ FT	3754	3825	3892	3962	4025	4088	4173	4238	4239	4250	4256	4232	4228	4523	4872	5316	5848	
18,000 LB 8165 KG	V1 ~ KIAS	112	112	112	112	112	112	112	112	110	108	106	104	102	100	101	102	104	
	VR ~ KIAS	116	117	117	117	117	117	117	116	114	112	110	109	109	109	110	110	110	
	V2 ~ KIAS	130	130	130	130	130	130	130	128	126	123	121	119	119	118	117	117	116	
	TOFL ~ FT	3684	3754	3819	3887	3949	4011	4094	4153	4152	4158	4162	4127	4113	4112	4416	4758	5192	
17,000 LB 7711 KG	V1 ~ KIAS	112	112	112	112	112	112	112	112	110	108	106	104	101	99	97	98	100	
	VR ~ KIAS	116	116	116	117	117	117	117	116	114	112	110	108	106	107	107	106	107	
	V2 ~ KIAS	130	130	130	130	130	130	130	129	126	124	121	118	116	116	115	113	113	
	TOFL ~ FT	3617	3685	3749	3815	3876	3937	4017	4072	4067	4068	4069	4032	3999	3959	3987	4244	4614	

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Figure 5.20.7

Flaps 0°   Field Pressure Altitude (6000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB 12,701 KG	V1 ~ KIAS	128	128	128	128	128	128	129	130	132	133	135	146	167					
	VR ~ KIAS	137	137	137	138	138	138	138	138	139	139	142	153	164					
	V2 ~ KIAS	145	145	145	145	145	145	145	145	145	145	146	156	167					
	TOFL ~ FT	5732	5872	6004	6140	6252	6434	6748	7144	7595	8111	8814	11208	16270					
27,000 LB 12,247 KG	V1 ~ KIAS	125	125	126	126	126	126	126	128	129	130	131	136	153					
	VR ~ KIAS	135	135	135	135	135	135	136	136	137	137	138	144	157					
	V2 ~ KIAS	143	143	143	143	143	143	143	143	143	143	143	147	160					
	TOFL ~ FT	5376	5505	5629	5756	5861	6029	6294	6659	7084	7564	8091	9252	12936					
26,000 LB 11,793 KG	V1 ~ KIAS	122	122	122	122	122	123	123	124	126	127	128	130	139	165				
	VR ~ KIAS	133	133	133	133	133	133	133	134	134	135	135	136	146	162				
	V2 ~ KIAS	141	141	141	141	141	141	141	141	141	141	141	141	149	164				
	TOFL ~ FT	5038	5159	5275	5393	5492	5651	5898	6208	6596	7048	7538	8102	9997	15909				
25,000 LB 11,340 KG	V1 ~ KIAS	118	118	118	119	118	119	120	121	122	123	125	126	128	144				
	VR ~ KIAS	130	130	130	130	130	130	130	131	131	132	132	133	134	150				
	V2 ~ KIAS	139	139	138	138	138	138	138	138	138	138	138	138	138	152				
	TOFL ~ FT	4670	4785	4893	5003	5096	5241	5472	5757	6084	6492	6951	7475	8117	11290				
24,000 LB 10,886 KG	V1 ~ KIAS	114	114	114	114	114	115	116	117	118	119	120	122	124	128	150			
	VR ~ KIAS	126	126	126	126	126	126	127	127	128	129	129	130	130	135	152			
	V2 ~ KIAS	136	136	136	136	136	135	135	135	135	135	135	135	135	138	154			
	TOFL ~ FT	4299	4405	4506	4610	4696	4836	5050	5310	5603	5955	6360	6849	7442	8503	12750			
23,000 LB 10,433 KG	V1 ~ KIAS	113	113	113	113	113	113	112	113	114	115	116	118	120	122	131			
	VR ~ KIAS	123	123	123	123	123	123	123	124	124	125	126	126	127	128	137			
	V2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	133	133	140			
	TOFL ~ FT	4149	4240	4333	4427	4516	4608	4652	4871	5143	5455	5807	6230	6781	7397	9183			
22,000 LB 9979 KG	V1 ~ KIAS	113	113	113	113	113	113	112	110	110	111	112	114	115	117	119	132		
	VR ~ KIAS	120	120	120	120	120	120	121	121	121	121	122	123	123	124	125	138		
	V2 ~ KIAS	131	131	131	131	131	131	131	130	130	130	130	130	130	130	130	141		
	TOFL ~ FT	4069	4161	4252	4344	4431	4520	4560	4577	4713	4983	5295	5658	6137	6703	7334	9821		
21,000 LB 9525 KG	V1 ~ KIAS	112	113	113	113	113	113	112	110	109	107	108	109	111	113	115	116		
	VR ~ KIAS	117	117	117	117	118	118	118	118	118	118	118	119	120	120	121	123		
	V2 ~ KIAS	129	129	129	129	129	129	128	128	127	127	126	126	126	126	126	126		
	TOFL ~ FT	3995	4084	4172	4261	4346	4432	4470	4483	4527	4564	4812	5132	5537	6029	6607	7256		
20,000 LB 9072 KG	V1 ~ KIAS	112	112	112	113	113	113	111	110	109	107	105	106	107	109	110	112		
	VR ~ KIAS	117	117	117	117	117	117	116	115	115	115	115	115	116	117	117	118		
	V2 ~ KIAS	129	129	129	129	129	129	127	126	125	125	124	124	123	123	123	123		
	TOFL ~ FT	3921	4006	4093	4179	4261	4344	4379	4390	4430	4457	4441	4670	4996	5413	5910	6498		
19,000 LB 8618 KG	V1 ~ KIAS	112	112	112	112	112	112	111	110	108	107	105	103	103	104	106	108		
	VR ~ KIAS	117	117	117	117	117	117	116	114	112	112	112	112	113	113	113	114		
	V2 ~ KIAS	130	130	130	129	129	128	127	125	123	122	122	121	121	120	120	120		
	TOFL ~ FT	3848	3931	4015	4099	4179	4260	4291	4299	4333	4357	4340	4311	4548	4864	5281	5784		
18,000 LB 8165 KG	V1 ~ KIAS	112	112	112	112	112	112	111	110	108	107	105	102	100	101	102	103		
	VR ~ KIAS	116	117	117	117	117	117	116	114	112	111	109	110	110	110	110	110		
	V2 ~ KIAS	130	130	130	130	130	129	128	125	123	121	119	119	118	118	117	116		
	TOFL ~ FT	3778	3859	3940	4021	4099	4176	4205	4211	4240	4260	4239	4209	4183	4426	4749	5147		
17,000 LB 7711 KG	V1 ~ KIAS	112	112	112	112	112	112	111	109	108	107	104	102	100	97	98	99		
	VR ~ KIAS	116	116	117	117	117	117	115	114	112	110	108	107	107	107	107	107		
	V2 ~ KIAS	130	130	130	130	130	130	128	126	124	121	119	117	116	115	114	113		
	TOFL ~ FT	3710	3789	3868	3946	4022	4096	4122	4124	4150	4166	4141	4107	4078	4037	4259	4574		

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Figure 5.20.8

Flaps 0° Field Pressure Altitude (7000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB **12,701 KG**	V1 ~ KIAS	127	128	128	129	129	130	131	132	133	135	145	162						
	VR ~ KIAS	138	138	138	138	138	138	139	139	140	142	152	162						
	V2 ~ KIAS	145	145	145	145	145	145	145	145	145	146	155	165						
	TOFL ~ FT	5756	5975	6206	6449	6695	7015	7368	7800	8288	8971	11142	15367						
27,000 LB **12,247 KG**	V1 ~ KIAS	124	125	125	126	126	127	128	129	130	131	135	149						
	VR ~ KIAS	135	135	135	136	136	136	137	137	137	138	143	154						
	V2 ~ KIAS	144	143	143	143	143	143	143	143	143	143	146	157						
	TOFL ~ FT	5397	5598	5816	6036	6254	6536	6865	7269	7725	8247	9230	12103						
26,000 LB **11,793 KG**	V1 ~ KIAS	121	122	122	123	123	124	125	126	127	128	130	136	154					
	VR ~ KIAS	133	133	133	133	133	134	134	135	135	136	136	143	157					
	V2 ~ KIAS	142	141	141	141	141	141	141	141	141	141	141	146	159					
	TOFL ~ FT	5066	5250	5450	5657	5859	6111	6389	6767	7195	7680	8211	9531	13723					
25,000 LB **11,340 KG**	V1 ~ KIAS	117	118	118	119	119	120	121	122	123	125	126	127	138					
	VR ~ KIAS	130	130	130	130	130	131	131	132	132	133	133	134	145					
	V2 ~ KIAS	139	139	139	138	138	138	138	138	138	138	138	138	147					
	TOFL ~ FT	4691	4868	5057	5250	5438	5670	5926	6241	6629	7084	7577	8147	10250					
24,000 LB **10,886 KG**	V1 ~ KIAS	113	114	114	115	116	116	117	118	119	121	122	124	125	141				
	VR ~ KIAS	126	126	126	127	127	127	128	128	129	129	130	130	131	147				
	V2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	136	149				
	TOFL ~ FT	4316	4476	4658	4838	5019	5233	5467	5752	6077	6483	6944	7469	8109	11254				
23,000 LB **10,433 KG**	V1 ~ KIAS	113	113	113	113	112	112	113	114	115	116	118	120	121	125	147			
	VR ~ KIAS	123	123	123	123	124	124	124	125	125	126	126	127	128	132	150			
	V2 ~ KIAS	134	133	133	133	133	133	133	133	133	133	133	133	133	135	152			
	TOFL ~ FT	4241	4378	4485	4615	4679	4798	5016	5280	5568	5917	6316	6804	7393	8416	12905			
22,000 LB **9979 KG**	V1 ~ KIAS	113	113	113	113	112	111	109	110	111	112	114	115	117	119	126	152		
	VR ~ KIAS	120	120	120	121	121	121	121	121	122	122	123	123	124	125	133	151		
	V2 ~ KIAS	132	132	131	131	131	131	130	130	130	130	130	130	130	130	136	153		
	TOFL ~ FT	4167	4281	4402	4527	4588	4607	4606	4830	5088	5396	5737	6155	6701	7314	8896	14331		
21,000 LB **9525 KG**	V1 ~ KIAS	113	113	113	113	112	111	109	108	107	108	109	111	112	114	116	126		
	VR ~ KIAS	117	117	117	118	118	118	118	118	118	118	119	120	120	121	122	133		
	V2 ~ KIAS	129	129	129	129	128	128	128	127	127	127	126	126	126	126	126	135		
	TOFL ~ FT	4093	4203	4319	4439	4498	4515	4512	4585	4653	4904	5204	5562	6021	6583	7206	9237		
20,000 LB **9072 KG**	V1 ~ KIAS	112	112	113	113	112	111	109	108	107	105	106	107	108	110	112	113		
	VR ~ KIAS	117	117	117	117	116	115	115	115	115	116	116	116	116	117	118	119		
	V2 ~ KIAS	130	129	129	129	128	126	126	125	125	124	124	123	123	123	123	123		
	TOFL ~ FT	4019	4126	4236	4352	4407	4423	4418	4487	4514	4528	4741	5019	5412	5883	6449	7081		
19,000 LB **8618 KG**	V1 ~ KIAS	112	112	112	112	112	110	109	108	107	105	103	103	104	105	107	109		
	VR ~ KIAS	117	117	117	117	116	115	113	112	112	113	113	113	113	113	114	115		
	V2 ~ KIAS	130	130	130	129	128	126	124	123	122	122	121	121	120	120	120	120		
	TOFL ~ FT	3948	4049	4156	4268	4320	4332	4326	4389	4414	4425	4401	4581	4885	5269	5738	6308		
18,000 LB **8165 KG**	V1 ~ KIAS	112	112	112	112	112	110	109	108	106	105	103	101	100	102	103	104		
	VR ~ KIAS	117	117	117	117	116	115	113	112	110	110	110	110	110	110	110	111		
	V2 ~ KIAS	130	130	130	130	128	126	124	123	121	120	119	118	118	117	117	117		
	TOFL ~ FT	3879	3976	4078	4184	4234	4246	4236	4295	4316	4322	4298	4276	4443	4757	5119	5589		
17,000 LB **7711 KG**	V1 ~ KIAS	112	112	112	112	111	110	108	108	106	105	103	100	97	98	98	100		
	VR ~ KIAS	116	116	117	117	116	114	113	112	110	108	107	107	107	107	106	107		
	V2 ~ KIAS	131	130	130	130	129	127	125	123	121	119	117	116	115	114	113	113		
	TOFL ~ FT	3813	3906	4003	4104	4151	4160	4150	4204	4220	4223	4195	4171	4225	4280	4554	4962		

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Figure 5.20.9

Flaps 0° Field Pressure Altitude (8000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB **12,701 KG**	V1 ~ KIAS	127	128	129	130	131	131	132	133	135	144	158							
	VR ~ KIAS	138	138	138	138	139	139	139	140	142	151	161							
	V2 ~ KIAS	146	145	145	145	145	145	145	145	146	154	163							
	TOFL ~ FT	6067	6332	6637	6969	7303	7665	8048	8518	9165	11187	14763							
27,000 LB **12,247 KG**	V1 ~ KIAS	125	125	126	127	128	129	130	131	132	134	146							
	VR ~ KIAS	136	136	136	136	137	137	137	138	138	142	152							
	V2 ~ KIAS	144	143	143	143	143	143	143	143	143	145	155							
	TOFL ~ FT	5689	5935	6203	6492	6805	7145	7498	7940	8436	9266	11783							
26,000 LB **11,793 KG**	V1 ~ KIAS	121	122	123	124	124	125	126	128	129	130	133	149						
	VR ~ KIAS	133	133	133	134	134	135	135	135	136	136	140	154						
	V2 ~ KIAS	142	141	141	141	141	141	141	141	141	141	144	156						
	TOFL ~ FT	5344	5563	5813	6075	6341	6647	6982	7390	7851	8373	9328	12645						
25,000 LB **11,340 KG**	V1 ~ KIAS	118	118	119	120	121	122	122	124	125	126	127	133	156					
	VR ~ KIAS	130	130	130	131	131	131	132	132	133	133	134	140	156					
	V2 ~ KIAS	139	139	139	139	139	139	138	138	138	138	138	143	159					
	TOFL ~ FT	4956	5164	5397	5638	5882	6148	6427	6811	7243	7731	8265	9559	14708					
24,000 LB **10,886 KG**	V1 ~ KIAS	113	114	115	116	117	118	119	120	121	122	124	125	135					
	VR ~ KIAS	126	127	127	127	128	128	128	129	130	130	131	131	142					
	V2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	144					
	TOFL ~ FT	4560	4761	4977	5205	5429	5671	5927	6240	6631	7085	7580	8138	10212					
23,000 LB **10,433 KG**	V1 ~ KIAS	113	113	113	112	113	114	115	116	117	118	119	121	122	139				
	VR ~ KIAS	124	124	124	124	124	124	125	125	126	127	127	128	128	144				
	V2 ~ KIAS	134	134	133	133	133	133	133	133	133	133	133	133	133	146				
	TOFL ~ FT	4468	4586	4699	4783	4981	5207	5440	5724	6048	6446	6905	7418	8067	11256				
22,000 LB **9979 KG**	V1 ~ KIAS	113	113	113	112	110	110	110	111	112	114	115	117	118	121	140			
	VR ~ KIAS	121	121	121	121	121	121	121	122	122	123	124	124	125	128	144			
	V2 ~ KIAS	132	132	131	131	130	130	130	130	130	130	130	130	130	131	146			
	TOFL ~ FT	4376	4500	4608	4654	4656	4769	4973	5229	5516	5853	6244	6720	7316	8192	12005			
21,000 LB **9525 KG**	V1 ~ KIAS	113	113	113	111	110	109	108	108	108	109	111	112	114	116	121			
	VR ~ KIAS	118	118	118	118	118	118	118	118	119	119	120	120	121	122	127			
	V2 ~ KIAS	129	129	129	129	128	128	127	127	127	127	127	127	127	127	130			
	TOFL ~ FT	4296	4415	4518	4561	4561	4592	4648	4777	5014	5310	5645	6035	6584	7191	8371			
20,000 LB **9072 KG**	V1 ~ KIAS	112	113	112	111	110	109	108	106	105	106	106	108	109	111	113			
	VR ~ KIAS	117	117	117	116	115	115	115	116	116	116	116	116	117	118	119			
	V2 ~ KIAS	130	129	128	127	126	125	125	125	124	124	123	123	123	123	123			
	TOFL ~ FT	4217	4330	4428	4468	4467	4496	4548	4590	4623	4841	5099	5439	5880	6436	7046			
19,000 LB **8618 KG**	V1 ~ KIAS	112	112	112	111	109	108	108	106	105	103	103	104	105	107	109			
	VR ~ KIAS	117	117	117	116	114	112	112	113	113	113	113	113	113	114	115			
	V2 ~ KIAS	130	130	129	127	125	123	123	123	122	122	121	120	120	120	120			
	TOFL ~ FT	4138	4247	4342	4378	4375	4400	4448	4489	4516	4505	4658	4923	5271	5725	6278			
18,000 LB **8165 KG**	V1 ~ KIAS	112	112	112	111	109	108	107	106	105	103	101	100	101	102	104			
	VR ~ KIAS	117	117	117	115	114	112	111	110	110	110	110	110	110	110	111			
	V2 ~ KIAS	130	130	129	127	125	124	122	121	120	119	119	118	117	117	117			
	TOFL ~ FT	4062	4167	4256	4290	4287	4307	4353	4388	4412	4399	4384	4476	4783	5127	5563			
17,000 LB **7711 KG**	V1 ~ KIAS	112	112	112	111	109	108	107	106	105	103	101	96	97	98	100			
	VR ~ KIAS	117	117	116	115	113	112	111	110	109	107	107	107	107	107	107			
	V2 ~ KIAS	131	130	129	128	126	124	123	121	119	117	116	116	115	114	113			
	TOFL ~ FT	3990	4090	4174	4205	4199	4218	4260	4291	4311	4294	4277	4296	4316	4581	4943			

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Figure 5.20.10

Flaps 0° Field Pressure Altitude (9000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB 12,701 KG	V1 ~ KIAS	129	129	130	131	132	133	133	138	146	158								
	VR ~ KIAS	138	138	139	139	140	140	140	146	153	161								
	V2 ~ KIAS	145	145	145	145	145	145	145	149	157	163								
	TOFL ~ FT	6584	6898	7248	7614	7987	8380	8792	9876	11887	14988								
27,000 LB 12,247 KG	V1 ~ KIAS	126	127	128	129	129	130	131	132	136	146								
	VR ~ KIAS	136	136	137	137	137	138	138	138	144	152								
	V2 ~ KIAS	143	143	143	143	143	143	143	143	147	155								
	TOFL ~ FT	6164	6430	6752	7096	7439	7809	8194	8673	9798	11974								
26,000 LB 11,793 KG	V1 ~ KIAS	123	123	124	125	126	127	128	129	130	133	147							
	VR ~ KIAS	134	134	134	135	135	135	136	136	136	140	153							
	V2 ~ KIAS	141	141	141	141	141	141	141	141	141	144	155							
	TOFL ~ FT	5774	6025	6300	6601	6924	7266	7622	8070	8571	9474	12530							
25,000 LB 11,340 KG	V1 ~ KIAS	119	120	121	121	122	123	124	125	126	128	132	151						
	VR ~ KIAS	130	131	131	132	132	132	133	133	134	134	139	154						
	V2 ~ KIAS	139	139	139	139	139	139	139	139	139	139	142	156						
	TOFL ~ FT	5363	5592	5845	6111	6383	6695	7030	7445	7912	8434	9526	13628						
24,000 LB 10,886 KG	V1 ~ KIAS	115	116	117	118	118	119	120	121	122	124	125	132	152					
	VR ~ KIAS	127	127	128	128	129	129	129	130	130	131	131	139	153					
	V2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	142	155					
	TOFL ~ FT	4952	5163	5396	5639	5887	6152	6433	6818	7253	7740	8264	9769	14416					
23,000 LB 10,433 KG	V1 ~ KIAS	113	112	113	114	114	115	116	117	118	120	121	122	132	160				
	VR ~ KIAS	124	124	124	124	125	125	126	126	127	127	128	128	139	160				
	V2 ~ KIAS	134	133	133	133	133	133	133	133	133	133	133	133	141	160				
	TOFL ~ FT	4710	4777	4949	5178	5405	5645	5898	6211	6600	7051	7536	8104	10188	16693				
22,000 LB 9979 KG	V1 ~ KIAS	113	112	111	110	110	111	112	113	114	115	117	118	120	133				
	VR ~ KIAS	121	121	121	121	121	122	122	123	123	124	124	125	125	139				
	V2 ~ KIAS	131	131	131	130	130	130	130	130	130	130	130	130	130	141				
	TOFL ~ FT	4620	4683	4705	4747	4946	5159	5389	5670	5993	6377	6827	7351	7992	10713				
21,000 LB 9525 KG	V1 ~ KIAS	113	112	111	109	108	107	108	109	110	111	112	114	115	117	134			
	VR ~ KIAS	118	119	118	118	118	118	119	119	119	120	120	121	122	122	139			
	V2 ~ KIAS	129	129	128	128	128	127	127	127	127	127	127	127	127	127	141			
	TOFL ~ FT	4530	4590	4610	4610	4681	4719	4913	5148	5433	5761	6131	6612	7202	7854	11275			
20,000 LB 9072 KG	V1 ~ KIAS	113	112	110	109	108	107	106	105	106	107	108	109	111	113	116			
	VR ~ KIAS	117	116	115	115	115	116	116	116	116	116	117	117	118	119	122			
	V2 ~ KIAS	129	128	126	126	125	125	125	124	124	124	123	123	123	123	125			
	TOFL ~ FT	4440	4498	4515	4514	4581	4608	4634	4710	4945	5207	5522	5913	6441	7036	7974			
19,000 LB 8618 KG	V1 ~ KIAS	112	112	110	109	108	107	106	104	103	103	104	105	106	108	110			
	VR ~ KIAS	117	116	115	113	112	113	113	113	113	113	113	113	114	115	115			
	V2 ~ KIAS	129	128	126	124	123	123	122	122	122	121	121	120	120	120	120			
	TOFL ~ FT	4354	4407	4422	4419	4481	4507	4531	4536	4558	4757	5008	5304	5738	6265	6860			
18,000 LB 8165 KG	V1 ~ KIAS	112	111	110	108	108	107	106	104	102	101	100	101	102	104	105			
	VR ~ KIAS	117	116	114	113	112	111	110	110	110	110	110	110	110	111	112			
	V2 ~ KIAS	130	128	126	124	123	121	120	120	119	119	118	118	117	117	117			
	TOFL ~ FT	4269	4320	4332	4327	4386	4409	4429	4432	4451	4476	4553	4825	5156	5560	6082			
17,000 LB 7711 KG	V1 ~ KIAS	112	111	110	108	108	107	105	104	102	101	96	97	98	99	101			
	VR ~ KIAS	117	116	114	112	111	110	109	108	107	107	107	107	107	107	108			
	V2 ~ KIAS	130	129	127	124	123	122	120	118	117	116	116	115	114	114	114			
	TOFL ~ FT	4187	4235	4245	4239	4276	4314	4331	4331	4345	4366	4362	4358	4622	4942	5373			

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Figure 5.20.11

Flaps 0° Field Pressure Altitude (10,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB **12,701 KG**	V1 ~ KIAS	130	131	132	133	133	135	141	148	158									
	VR ~ KIAS	139	139	140	140	140	143	149	155	161									
	V2 ~ KIAS	146	146	146	146	146	146	153	158	163									
	TOFL ~ FT	7216	7556	7937	8332	8737	9285	10716	12526	15422									
27,000 LB **12,247 KG**	V1 ~ KIAS	128	128	129	130	131	132	132	138	146	165								
	VR ~ KIAS	137	137	137	138	138	138	139	145	152	163								
	V2 ~ KIAS	144	144	144	144	144	144	144	149	155	166								
	TOFL ~ FT	6722	7040	7392	7759	8143	8537	8959	10260	12227	17428								
26,000 LB **11,793 KG**	V1 ~ KIAS	124	125	126	127	128	129	130	130	133	146								
	VR ~ KIAS	134	135	135	135	136	136	136	137	140	152								
	V2 ~ KIAS	141	142	142	141	141	141	142	141	144	155								
	TOFL ~ FT	6275	6548	6878	7221	7574	7945	8336	8823	9676	12582								
25,000 LB **11,340 KG**	V1 ~ KIAS	121	121	122	123	124	125	126	127	128	131	147							
	VR ~ KIAS	131	131	132	132	133	133	133	134	134	138	152							
	V2 ~ KIAS	139	139	139	139	139	139	139	139	139	141	154							
	TOFL ~ FT	5823	6070	6345	6652	6981	7326	7687	8136	8637	9586	12985							
24,000 LB **10,886 KG**	V1 ~ KIAS	117	117	118	119	120	121	122	123	124	125	130	146						
	VR ~ KIAS	128	128	129	129	129	130	130	131	131	131	137	150						
	V2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	140	152						
	TOFL ~ FT	5377	5603	5854	6119	6395	6707	7044	7463	7927	8452	9571	13211						
23,000 LB **10,433 KG**	V1 ~ KIAS	113	113	114	115	116	117	117	119	120	121	122	128	152					
	VR ~ KIAS	124	125	125	125	126	126	127	127	128	128	129	135	153					
	V2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	138	155					
	TOFL ~ FT	4944	5144	5375	5616	5866	6129	6407	6792	7222	7710	8239	9596	14735					
22,000 LB **9979 KG**	V1 ~ KIAS	112	110	110	111	112	113	113	114	115	117	118	119	128	154				
	VR ~ KIAS	121	121	122	122	122	123	123	123	124	124	125	126	135	151				
	V2 ~ KIAS	131	131	130	130	130	130	130	130	130	130	130	130	137	153				
	TOFL ~ FT	4761	4756	4923	5133	5361	5597	5849	6161	6535	6985	7474	8038	9869	15904				
21,000 LB **9525 KG**	V1 ~ KIAS	111	110	109	108	108	108	109	110	111	112	114	115	117	127				
	VR ~ KIAS	119	118	119	119	119	119	119	120	120	121	121	122	122	133				
	V2 ~ KIAS	129	128	128	128	127	127	127	127	127	127	127	127	127	136				
	TOFL ~ FT	4665	4659	4694	4749	4894	5088	5311	5590	5897	6273	6720	7241	7879	10003				
20,000 LB **9072 KG**	V1 ~ KIAS	111	110	108	108	106	105	105	106	107	108	109	110	112	114				
	VR ~ KIAS	116	116	116	116	116	116	116	116	116	117	117	118	119	119				
	V2 ~ KIAS	127	126	126	125	125	125	124	124	124	124	124	124	124	124				
	TOFL ~ FT	4569	4562	4595	4647	4673	4689	4847	5078	5331	5646	6009	6471	7056	7694				
19,000 LB **8618 KG**	V1 ~ KIAS	111	109	108	107	106	105	103	102	103	104	105	106	108	109				
	VR ~ KIAS	116	114	113	113	113	113	113	113	113	113	113	114	115	115				
	V2 ~ KIAS	127	125	123	123	123	122	122	122	121	121	120	120	120	120				
	TOFL ~ FT	4475	4467	4496	4544	4570	4584	4587	4635	4872	5126	5398	5767	6279	6855				
18,000 LB **8165 KG**	V1 ~ KIAS	111	109	108	107	106	105	103	102	101	100	101	102	103	105				
	VR ~ KIAS	115	113	112	111	110	110	110	110	110	111	111	111	111	112				
	V2 ~ KIAS	127	125	123	122	120	120	120	119	119	118	118	117	117	117				
	TOFL ~ FT	4384	4374	4401	4446	4468	4479	4481	4525	4575	4661	4915	5202	5576	6073				
17,000 LB **7711 KG**	V1 ~ KIAS	111	109	108	107	106	105	103	102	101	99	97	98	99	100				
	VR ~ KIAS	115	113	112	111	110	108	107	107	108	108	108	107	107	108				
	V2 ~ KIAS	128	125	124	122	121	119	117	117	117	116	116	115	114	114				
	TOFL ~ FT	4296	4285	4309	4351	4369	4379	4379	4416	4462	4451	4443	4677	4964	5371				

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Figure 5.20.12

Flaps 0° Field Pressure Altitude (11,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB 12,701 KG	V1 ~ KIAS	132	133	133	134	138	145	153											
	VR ~ KIAS	140	140	140	141	146	153	158											
	V2 ~ KIAS	146	146	146	146	150	156	161											
	TOFL ~ FT	7916	8286	8694	9126	10176	11800	13911											
27,000 LB 12,247 KG	V1 ~ KIAS	129	130	131	132	132	136	142	152										
	VR ~ KIAS	138	138	138	139	139	143	149	157										
	V2 ~ KIAS	144	144	144	144	144	147	153	160										
	TOFL ~ FT	7373	7717	8101	8503	8910	9777	11287	13832										
26,000 LB 11,793 KG	V1 ~ KIAS	126	127	128	129	129	130	131	138	149									
	VR ~ KIAS	135	135	136	136	136	137	137	145	154									
	V2 ~ KIAS	142	142	142	142	142	142	142	149	157									
	TOFL ~ FT	6858	7180	7533	7907	8292	8688	9117	10752	13554									
25,000 LB 11,340 KG	V1 ~ KIAS	122	123	124	125	126	127	127	128	134	148								
	VR ~ KIAS	132	132	133	133	133	134	134	134	141	153								
	V2 ~ KIAS	139	139	139	139	139	139	139	139	144	155								
	TOFL ~ FT	6332	6610	6942	7292	7645	8015	8409	8896	10206	13544								
24,000 LB 10,886 KG	V1 ~ KIAS	118	119	120	121	122	122	123	124	125	130	145							
	VR ~ KIAS	129	129	129	130	130	131	131	131	132	138	149							
	V2 ~ KIAS	136	136	136	136	136	136	136	136	136	141	152							
	TOFL ~ FT	5841	6089	6362	6674	7002	7346	7714	8165	8666	9907	13229							
23,000 LB 10,433 KG	V1 ~ KIAS	114	115	116	116	117	118	119	120	121	122	128	146						
	VR ~ KIAS	125	125	126	126	127	127	127	128	128	129	135	149						
	V2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	137	151						
	TOFL ~ FT	5365	5590	5837	6104	6376	6683	7023	7443	7905	8428	9661	13775						
22,000 LB 9979 KG	V1 ~ KIAS	110	111	112	112	113	114	115	116	117	118	119	125	145					
	VR ~ KIAS	122	122	122	123	123	123	124	124	125	125	126	132	147					
	V2 ~ KIAS	131	130	130	130	130	130	130	130	130	130	130	135	149					
	TOFL ~ FT	4919	5114	5335	5577	5822	6081	6360	6738	7164	7646	8179	9525	14031					
21,000 LB 9525 KG	V1 ~ KIAS	109	108	108	108	109	110	110	111	112	114	115	116	122	142				
	VR ~ KIAS	119	119	119	119	119	120	120	120	121	121	122	122	129	144				
	V2 ~ KIAS	128	128	128	127	127	127	127	127	127	127	127	127	132	146				
	TOFL ~ FT	4713	4783	4880	5077	5288	5521	5769	6078	6435	6876	7368	7933	9370	13877				
20,000 LB 9072 KG	V1 ~ KIAS	109	108	107	106	105	106	106	107	108	109	110	112	113	120				
	VR ~ KIAS	116	116	116	116	116	116	116	116	117	118	118	119	119	127				
	V2 ~ KIAS	126	126	125	125	125	124	124	124	124	124	124	124	124	130				
	TOFL ~ FT	4614	4680	4706	4733	4837	5025	5230	5486	5791	6144	6586	7103	7710	9320				
19,000 LB 8618 KG	V1 ~ KIAS	109	108	107	105	104	103	103	103	104	105	106	107	109	110				
	VR ~ KIAS	113	113	113	113	113	113	113	113	114	114	114	115	115	116				
	V2 ~ KIAS	124	123	123	123	122	122	122	121	121	120	120	120	120	120				
	TOFL ~ FT	4515	4577	4603	4628	4633	4651	4772	5001	5245	5515	5874	6318	6872	7468				
18,000 LB 8165 KG	V1 ~ KIAS	108	108	106	105	104	103	102	100	100	101	102	103	104	106				
	VR ~ KIAS	112	112	110	110	110	110	110	110	111	111	111	111	112	112				
	V2 ~ KIAS	124	123	121	120	120	120	119	119	119	118	118	117	117	117				
	TOFL ~ FT	4420	4479	4500	4523	4527	4544	4616	4602	4771	5024	5299	5619	6084	6627				
17,000 LB 7711 KG	V1 ~ KIAS	108	108	106	105	104	103	101	97	99	97	98	99	100	101				
	VR ~ KIAS	112	111	110	109	108	107	107	108	108	108	108	107	108	108				
	V2 ~ KIAS	124	123	121	120	118	117	117	117	116	116	115	114	114	114				
	TOFL ~ FT	4325	4383	4402	4422	4424	4437	4461	4485	4509	4541	4766	5008	5391	5830				

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Figure 5.20.13

Flaps 0° Field Pressure Altitude (12,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB 12,701 KG	V1 ~ KIAS	133	134	136	143	150	160												
	VR ~ KIAS	141	141	144	151	156	162												
	V2 ~ KIAS	146	146	148	154	159	165												
	TOFL ~ FT	8771	9177	9871	11451	13267	16132												
27,000 LB 12,247 KG	V1 ~ KIAS	131	132	132	133	139	147	158											
	VR ~ KIAS	138	139	139	141	147	154	160											
	V2 ~ KIAS	144	144	144	145	150	156	163											
	TOFL ~ FT	8171	8550	8964	9518	10840	12722	15702											
26,000 LB 11,793 KG	V1 ~ KIAS	128	129	129	130	131	134	142	152										
	VR ~ KIAS	136	136	137	137	137	142	149	156										
	V2 ~ KIAS	142	142	142	142	142	145	152	159										
	TOFL ~ FT	7599	7951	8339	8756	9169	10070	11878	14755										
25,000 LB 11,340 KG	V1 ~ KIAS	124	125	126	126	127	128	129	136	150									
	VR ~ KIAS	133	133	134	134	134	134	136	143	153									
	V2 ~ KIAS	139	139	139	139	139	139	140	146	156									
	TOFL ~ FT	7001	7329	7686	8071	8455	8854	9327	10912	14353									
24,000 LB 10,886 KG	V1 ~ KIAS	120	120	121	122	123	124	125	126	131	145								
	VR ~ KIAS	130	130	130	131	131	131	132	132	138	149								
	V2 ~ KIAS	137	137	137	137	137	137	137	137	141	151								
	TOFL ~ FT	6421	6704	7038	7398	7753	8124	8519	9017	10368	13550								
23,000 LB 10,433 KG	V1 ~ KIAS	116	116	117	118	119	120	121	122	123	127	143							
	VR ~ KIAS	126	126	127	127	127	128	128	129	129	134	147							
	V2 ~ KIAS	134	134	134	134	134	134	134	134	134	137	149							
	TOFL ~ FT	5890	6140	6414	6730	7058	7403	7766	8227	8734	9902	13465							
22,000 LB 9979 KG	V1 ~ KIAS	112	112	113	114	115	115	116	117	119	120	123	139						
	VR ~ KIAS	122	123	123	123	124	124	125	125	125	126	130	143						
	V2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	133	145						
	TOFL ~ FT	5384	5611	5856	6128	6396	6699	7033	7460	7926	8456	9481	13084						
21,000 LB 9525 KG	V1 ~ KIAS	108	108	109	110	110	111	112	113	114	115	116	120	135					
	VR ~ KIAS	119	119	119	120	120	120	121	121	122	122	123	127	140					
	V2 ~ KIAS	128	128	127	127	127	127	127	127	127	127	127	129	142					
	TOFL ~ FT	4937	5119	5320	5565	5805	6062	6334	6705	7130	7618	8149	9107	12648					
20,000 LB 9072 KG	V1 ~ KIAS	107	106	105	106	106	107	108	108	109	111	112	113	116	133				
	VR ~ KIAS	116	116	116	116	116	116	117	117	118	118	119	119	123	137				
	V2 ~ KIAS	126	125	125	125	124	124	124	124	124	124	124	124	126	139				
	TOFL ~ FT	4795	4818	4877	5075	5275	5478	5717	6024	6367	6808	7296	7854	8839	12605				
19,000 LB 8618 KG	V1 ~ KIAS	107	106	105	103	103	103	104	104	105	106	107	109	110	113				
	VR ~ KIAS	113	113	113	113	113	114	114	114	114	114	115	115	116	120				
	V2 ~ KIAS	123	123	123	122	122	122	121	121	121	121	121	121	121	123				
	TOFL ~ FT	4689	4710	4723	4739	4813	5004	5204	5453	5713	6063	6490	7000	7577	8564				
18,000 LB 8165 KG	V1 ~ KIAS	107	106	104	103	102	101	100	101	102	102	103	104	106	107				
	VR ~ KIAS	111	110	110	110	111	111	111	111	111	111	111	112	112	113				
	V2 ~ KIAS	122	121	120	120	120	119	119	119	118	118	117	117	117	117				
	TOFL ~ FT	4586	4604	4615	4630	4679	4682	4726	4961	5204	5478	5780	6194	6722	7287				
17,000 LB 7711 KG	V1 ~ KIAS	107	106	104	103	102	101	96	99	98	98	99	100	101	103				
	VR ~ KIAS	111	109	108	107	108	108	108	108	108	108	107	108	108	109				
	V2 ~ KIAS	122	120	119	117	117	117	117	116	116	115	114	114	114	114				
	TOFL ~ FT	4486	4502	4511	4522	4546	4570	4603	4636	4708	4931	5161	5495	5915	6426				

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Figure 5.20.14

Flaps 0° Field Pressure Altitude (13,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB 12,701 KG	V1 ~ KIAS	135	141	147	156														
	VR ~ KIAS	141	149	154	160														
	V2 ~ KIAS	146	152	158	163														
	TOFL ~ FT	9801	11246	12989	15531														
27,000 LB 12,247 KG	V1 ~ KIAS	132	133	137	144	153													
	VR ~ KIAS	139	139	145	151	158													
	V2 ~ KIAS	144	144	148	154	161													
	TOFL ~ FT	9132	9552	10675	12414	14925													
26,000 LB 11,793 KG	V1 ~ KIAS	129	130	131	132	139	148												
	VR ~ KIAS	137	137	137	140	146	154												
	V2 ~ KIAS	142	142	142	143	150	156												
	TOFL ~ FT	8489	8884	9312	9951	11506	13811												
25,000 LB 11,340 KG	V1 ~ KIAS	126	126	127	128	129	133	142	158										
	VR ~ KIAS	134	134	134	135	135	140	149	157										
	V2 ~ KIAS	139	139	139	139	139	143	151	160										
	TOFL ~ FT	7828	8187	8584	9009	9423	10480	12688	17035										
24,000 LB 10,886 KG	V1 ~ KIAS	121	122	123	124	125	125	127	136	148									
	VR ~ KIAS	130	131	131	131	132	132	135	143	151									
	V2 ~ KIAS	137	137	137	137	137	137	138	145	153									
	TOFL ~ FT	7168	7503	7869	8267	8656	9060	9686	11580	14809									
23,000 LB 10,433 KG	V1 ~ KIAS	117	118	119	120	121	121	122	123	129	144								
	VR ~ KIAS	127	127	128	128	128	129	129	129	136	148								
	V2 ~ KIAS	134	134	134	134	134	134	134	134	139	150								
	TOFL ~ FT	6534	6821	7161	7530	7888	8265	8674	9175	10675	14367								
22,000 LB 9979 KG	V1 ~ KIAS	113	114	114	115	116	117	118	119	120	124	139							
	VR ~ KIAS	123	124	124	124	125	125	125	126	126	131	143							
	V2 ~ KIAS	131	131	131	131	131	131	131	131	131	134	145							
	TOFL ~ FT	5968	6218	6496	6810	7142	7491	7869	8329	8846	9995	13416							
21,000 LB 9525 KG	V1 ~ KIAS	109	110	110	111	112	112	113	114	116	117	119	133						
	VR ~ KIAS	119	120	120	120	121	121	121	122	122	123	126	138						
	V2 ~ KIAS	128	127	127	127	127	127	127	127	127	127	129	140						
	TOFL ~ FT	5426	5649	5897	6170	6438	6730	7075	7497	7971	8503	9411	12525						
20,000 LB 9072 KG	V1 ~ KIAS	105	106	106	107	107	108	109	110	111	112	113	115	129					
	VR ~ KIAS	117	117	117	117	117	117	118	118	118	119	119	122	135					
	V2 ~ KIAS	125	125	125	124	124	124	124	124	124	124	124	125	137					
	TOFL ~ FT	4977	5161	5367	5587	5813	6068	6345	6696	7128	7614	8147	8933	12103					
19,000 LB 8618 KG	V1 ~ KIAS	105	104	103	103	104	104	105	105	106	108	109	110	111					
	VR ~ KIAS	114	114	114	114	114	114	114	114	115	115	116	116	117					
	V2 ~ KIAS	123	122	122	122	122	121	121	121	121	121	121	121	121					
	TOFL ~ FT	4841	4862	4895	5103	5297	5505	5723	6005	6345	6774	7258	7807	8422					
18,000 LB 8165 KG	V1 ~ KIAS	105	104	102	101	100	101	101	102	102	103	104	106	107					
	VR ~ KIAS	111	111	111	111	111	111	111	111	111	111	112	112	113					
	V2 ~ KIAS	120	120	120	119	119	119	119	118	118	117	117	117	117					
	TOFL ~ FT	4731	4751	4781	4814	4843	5006	5208	5451	5722	6027	6422	6923	7481					
17,000 LB 7711 KG	V1 ~ KIAS	105	103	102	101	97	97	98	98	98	99	100	101	102					
	VR ~ KIAS	109	108	108	108	108	108	108	108	108	108	108	109	109					
	V2 ~ KIAS	119	118	117	117	117	116	116	116	115	114	114	114	114					
	TOFL ~ FT	4624	4640	4667	4699	4720	4742	4764	4924	5144	5379	5700	6092	6593					

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Figure 5.20.15

Flaps 0° Field Pressure Altitude (14,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 LB 12,701 KG	V1 ~ KIAS	145	153																
	VR ~ KIAS	153	158																
	V2 ~ KIAS	156	161																
	TOFL ~ FT	12782	14942																
27,000 LB 12,247 KG	V1 ~ KIAS	135	142	150															
	VR ~ KIAS	143	149	156															
	V2 ~ KIAS	147	152	158															
	TOFL ~ FT	10545	12077	14343															
26,000 LB 11,793 KG	V1 ~ KIAS	131	131	136	145	156													
	VR ~ KIAS	137	138	144	152	158													
	V2 ~ KIAS	142	142	147	154	161													
	TOFL ~ FT	9492	9925	11210	13382	16583													
25,000 LB 11,340 KG	V1 ~ KIAS	127	128	129	131	138	148												
	VR ~ KIAS	134	135	135	138	146	153												
	V2 ~ KIAS	140	140	140	141	148	155												
	TOFL ~ FT	8744	9144	9587	10318	12114	14809												
24,000 LB 10,886 KG	V1 ~ KIAS	123	124	125	125	126	131	139	151										
	VR ~ KIAS	131	132	132	132	132	138	146	153										
	V2 ~ KIAS	137	137	137	137	137	141	148	155										
	TOFL ~ FT	8020	8388	8797	9228	9654	10819	12845	16393										
23,000 LB 10,433 KG	V1 ~ KIAS	119	120	121	121	122	123	124	131	146									
	VR ~ KIAS	128	128	128	129	129	129	131	138	149									
	V2 ~ KIAS	134	134	134	134	134	134	134	141	151									
	TOFL ~ FT	7298	7639	8017	8418	8808	9223	9745	11448	15241									
22,000 LB 9979 KG	V1 ~ KIAS	115	115	116	117	118	119	119	120	125	138								
	VR ~ KIAS	124	124	125	125	125	126	126	126	132	143								
	V2 ~ KIAS	131	131	131	131	131	131	131	131	135	145								
	TOFL ~ FT	6622	6908	7258	7628	7991	8372	8787	9296	10592	13917								
21,000 LB 9525 KG	V1 ~ KIAS	110	111	112	112	113	114	115	116	117	119	131							
	VR ~ KIAS	120	121	121	121	122	122	122	123	123	126	137							
	V2 ~ KIAS	128	128	128	128	128	128	128	128	128	129	139							
	TOFL ~ FT	6012	6262	6546	6851	7184	7533	7915	8381	8905	9793	12614							
20,000 LB 9072 KG	V1 ~ KIAS	106	107	107	108	109	109	110	111	112	113	115	126						
	VR ~ KIAS	117	117	117	117	118	118	118	119	119	120	121	133						
	V2 ~ KIAS	125	125	124	124	124	124	124	124	124	124	125	135						
	TOFL ~ FT	5478	5684	5912	6181	6449	6734	7076	7498	7976	8506	9146	11906						
19,000 LB 8618 KG	V1 ~ KIAS	103	103	104	104	105	105	106	107	108	109	110	111	122					
	VR ~ KIAS	114	114	114	114	114	114	114	115	115	116	116	117	128					
	V2 ~ KIAS	122	122	122	121	121	121	121	121	121	121	121	121	130					
	TOFL ~ FT	5030	5189	5397	5621	5832	6054	6329	6668	7098	7580	8109	8694	11194					
18,000 LB 8165 KG	V1 ~ KIAS	103	102	101	101	101	102	102	103	103	104	106	107	108					
	VR ~ KIAS	111	111	111	111	111	111	111	111	112	112	112	113	113					
	V2 ~ KIAS	120	120	119	119	119	119	118	118	118	118	118	118	118					
	TOFL ~ FT	4912	4940	4974	5110	5308	5517	5739	6009	6311	6708	7190	7718	8308					
17,000 LB 7711 KG	V1 ~ KIAS	103	102	98	97	98	98	98	99	99	100	101	102	104					
	VR ~ KIAS	108	108	108	108	108	108	108	108	108	108	109	109	110					
	V2 ~ KIAS	118	117	117	117	116	116	116	115	114	114	114	114	114					
	TOFL ~ FT	4795	4822	4850	4878	4906	4991	5174	5396	5624	5950	6333	6799	7340					

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Figure 5.20.16

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TAKE-OFF FIELD LENGTH CORRECTION
FLAPS 0°

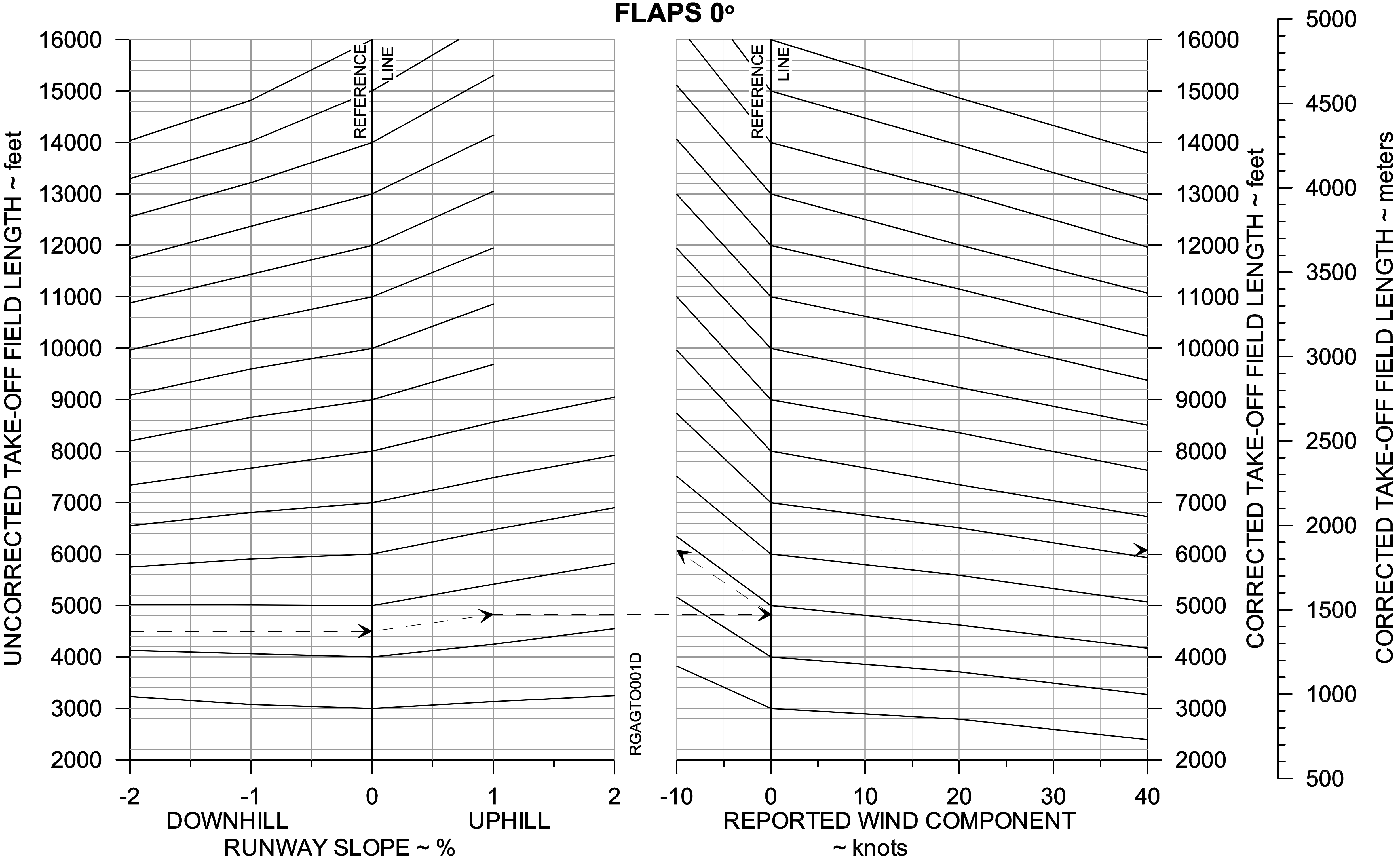

Figure 5.20.17

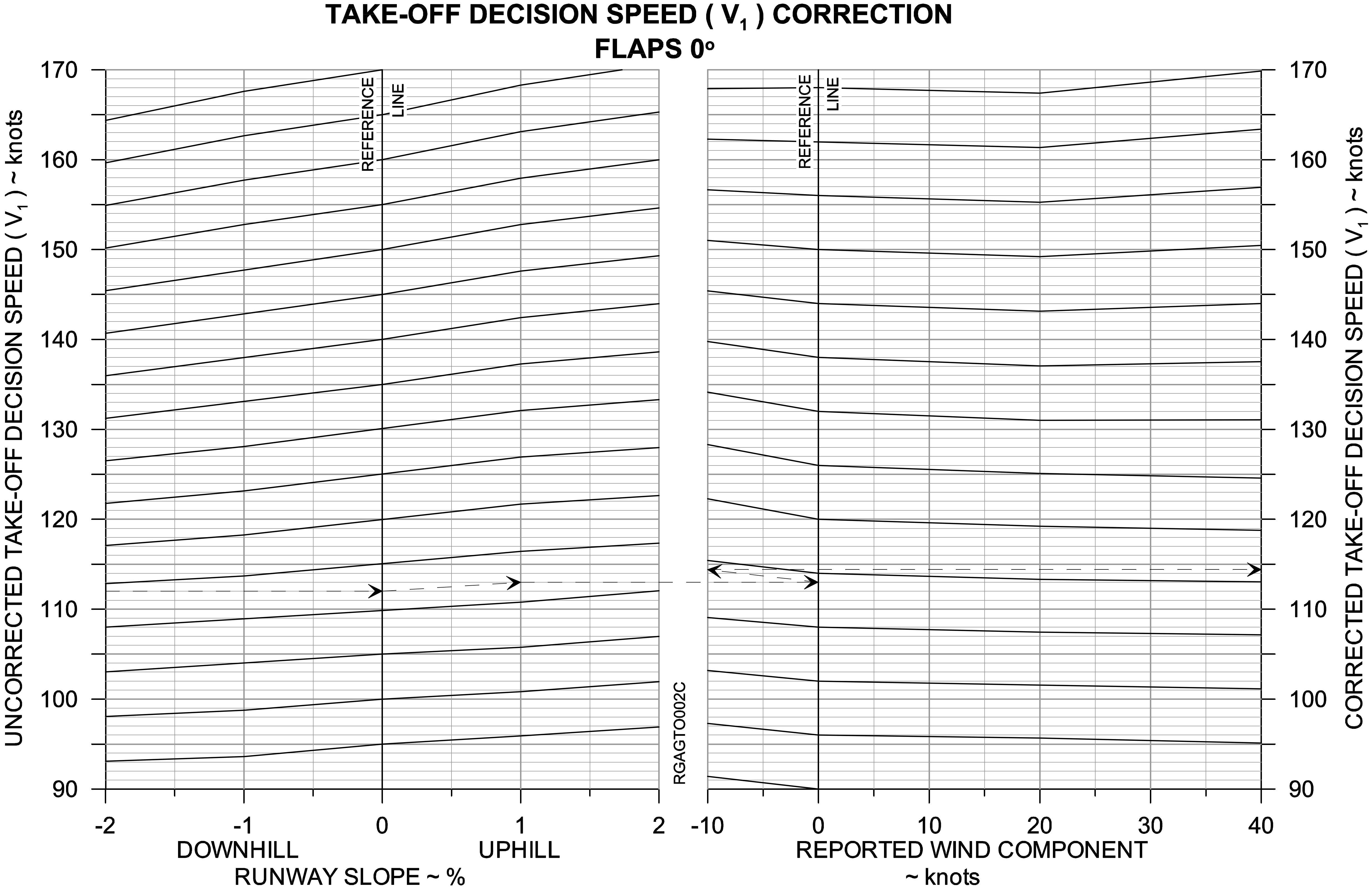

Figure 5.20.18

Flaps 15° Field Pressure Altitude (Sea Level)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS	122	122	122	122	122	122	122	122	122	122	122	122	123	125	126			
	VR ~ KIAS	130	130	131	131	131	131	131	131	131	131	131	131	131	131	131			
	V2 ~ KIAS	141	141	141	141	140	140	140	140	140	140	140	140	140	139	138			
	TO FL ~ FT	4365	4426	4488	4557	4633	4708	4783	4860	4941	5032	5106	5281	5641	6061	6543			
27,000 lb 12,247 kg	V1 ~ KIAS	119	118	118	118	118	118	118	118	118	118	118	119	120	121	122			
	VR ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128			
	V2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	137	136	136			
	TO FL ~ FT	4076	4132	4193	4257	4325	4394	4464	4533	4610	4696	4763	4922	5254	5625	6076			
26,000 lb 11,793 kg	V1 ~ KIAS	115	115	115	115	115	115	115	115	115	115	115	115	116	117	119	120		
	VR ~ KIAS	124	124	124	125	125	125	125	125	125	125	125	125	125	125	125	126		
	V2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	135	135	134	133	133		
	TO FL ~ FT	3801	3853	3910	3970	4033	4098	4163	4231	4302	4375	4439	4588	4894	5226	5621	6096		
25,000 lb 11,340 kg	V1 ~ KIAS	112	112	113	113	113	113	113	113	113	113	113	113	113	114	115	116	117	
	VR ~ KIAS	121	121	121	121	121	121	121	121	121	121	121	122	122	122	122	122	122	
	V2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	132	132	131	130	129	
	TO FL ~ FT	3605	3665	3726	3788	3851	3916	3980	4045	4112	4180	4244	4362	4528	4827	5181	5606	6096	
24,000 lb 10,886 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	113	113	113	113	111	110	111	113	114	
	VR ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	118	119	119	119	119	119	
	V2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	130	130	129	128	128	127	
	TO FL ~ FT	3552	3610	3670	3731	3794	3857	3921	3984	4050	4117	4180	4293	4359	4463	4783	5160	5595	
23,000 lb 10,433 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	113	111	108	108	109	110	111
	VR ~ KIAS	115	115	115	115	115	115	115	115	115	115	115	115	116	116	116	116	116	116
	V2 ~ KIAS	129	129	129	129	128	128	128	128	128	128	128	128	127	126	126	125	124	123
	TO FL ~ FT	3496	3554	3613	3673	3735	3797	3859	3922	3986	4051	4113	4223	4282	4239	4393	4733	5118	5533
22,000 lb 9979 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	106	107	108
	VR ~ KIAS	112	112	112	112	112	112	113	113	113	113	113	113	113	113	113	114	114	114
	V2 ~ KIAS	127	127	127	127	127	127	127	127	126	126	126	126	125	124	124	123	122	121
	TO FL ~ FT	3442	3499	3557	3616	3676	3737	3799	3860	3923	3987	4048	4153	4206	4159	4117	4382	4733	5102
21,000 lb 9525 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	103	104	105
	VR ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	111	111	111	111	111
	V2 ~ KIAS	127	127	127	127	127	127	127	126	126	126	126	126	124	122	121	121	120	119
	TO FL ~ FT	3389	3445	3502	3560	3619	3679	3739	3800	3861	3924	3983	4084	4131	4080	4034	4041	4359	4689
20,000 lb 9072 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	101	102
	VR ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	108	108	108	109
	V2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	126	124	120	119	119	118	117
	TO FL ~ FT	3336	3393	3449	3506	3563	3622	3681	3740	3800	3861	3920	4017	4057	4002	3951	3910	3990	4283
19,000 lb 8618 kg	V1 ~ KIAS	111	111	111	111	111	111	112	112	112	112	112	112	110	108	105	102	99	99
	VR ~ KIAS	111	111	111	111	111	111	112	112	112	112	112	112	110	108	105	105	106	106
	V2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	126	124	121	117	116	115	115
	TO FL ~ FT	3286	3341	3397	3453	3510	3568	3627	3685	3744	3802	3860	3952	3986	3927	3872	3826	3783	3906
18,000 lb 8165 kg	V1 ~ KIAS	111	111	111	111	111	111	111	111	111	111	111	112	110	107	105	102	99	96
	VR ~ KIAS	111	111	111	111	111	111	111	111	111	111	111	112	110	107	105	103	103	103
	V2 ~ KIAS	128	128	128	128	127	127	127	127	127	127	127	127	124	121	117	114	113	112
	TO FL ~ FT	3240	3294	3349	3405	3461	3518	3574	3631	3689	3747	3804	3892	3919	3856	3796	3745	3696	3621
17,000 lb 7711 kg	V1 ~ KIAS	111	111	111	111	111	111	111	111	111	111	111	111	110	107	104	102	99	96
	VR ~ KIAS	111	111	111	111	111	111	111	111	111	111	111	111	110	107	104	102	100	100
	V2 ~ KIAS	128	128	128	128	128	128	128	128	128	127	127	127	125	121	117	114	111	110
	TO FL ~ FT	3198	3252	3306	3361	3416	3472	3527	3583	3640	3697	3752	3836	3856	3788	3724	3667	3614	3534

Figure 5.20.19

Flaps 15° Field Pressure Altitude (1000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS	122	122	122	122	122	122	122	122	122	122	122	123	124	125	126			
	VR ~ KIAS	130	131	131	131	131	131	131	131	131	131	131	131	131	131	131			
	V2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	140	139	138	138			
	TO FL ~ FT	4520	4585	4648	4719	4794	4872	4951	5033	5122	5207	5339	5645	6049	6518	7035			
27,000 lb 12,247 kg	V1 ~ KIAS	119	118	118	118	118	118	118	118	118	118	119	119	120	122	123			
	VR ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	128	128	128	129			
	V2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	137	137	136	135			
	TO FL ~ FT	4218	4275	4338	4403	4474	4546	4625	4697	4775	4853	4980	5262	5619	6045	6523			
26,000 lb 11,793 kg	V1 ~ KIAS	115	115	115	115	115	115	115	115	115	115	115	116	117	118	119	120		
	VR ~ KIAS	124	125	125	125	125	125	125	125	125	125	125	125	125	125	126	126		
	V2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	135	135	134	134	133	132		
	TO FL ~ FT	3936	3990	4048	4109	4175	4243	4307	4376	4457	4527	4640	4896	5226	5600	6039	6548		
25,000 lb 11,340 kg	V1 ~ KIAS	112	113	113	113	113	113	113	113	113	113	113	112	113	114	116	117	118	
	VR ~ KIAS	121	121	121	121	121	121	121	121	121	122	122	122	122	122	122	122	123	
	V2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	132	131	130	130	129	
	TO FL ~ FT	3728	3789	3851	3916	3982	4049	4116	4182	4252	4321	4421	4535	4834	5171	5552	6016	129	
24,000 lb 10886 kg	V1 ~ KIAS	112	112	112	112	112	113	113	113	113	113	113	112	110	111	112	113	115	
	VR ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	119	119	119	119	119	120	
	V2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	130	129	129	128	127	126	
	TO FL ~ FT	3671	3731	3793	3857	3922	3987	4053	4119	4187	4255	4352	4429	4468	4771	5116	5531	6015	
23,000 lb 10,433 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	113	113	111	109	107	108	110	111	112
	VR ~ KIAS	115	115	115	115	115	115	115	115	115	115	115	115	116	116	116	116	116	116
	V2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	127	127	126	125	124	123	123
	TO FL ~ FT	3614	3673	3734	3796	3860	3925	3989	4053	4120	4187	4281	4352	4342	4386	4693	5059	5485	5943
22,000 lb 9979 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	105	107	108	109
	VR ~ KIAS	112	112	112	112	113	113	113	113	113	113	113	113	113	113	113	114	114	114
	V2 ~ KIAS	127	127	127	127	127	127	126	126	126	126	126	125	125	124	123	122	121	120
	TO FL ~ FT	3557	3615	3675	3736	3799	3862	3926	3989	4054	4120	4211	4276	4261	4228	4353	4683	5067	5478
21,000 lb 9525 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	103	104	105	106
	VR ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	111	111	111	111	111	111
	V2 ~ KIAS	127	127	127	127	126	126	126	126	126	126	126	124	123	122	121	120	119	118
	TO FL ~ FT	3501	3559	3618	3678	3740	3802	3864	3926	3990	4054	4142	4201	4182	4145	4098	4321	4659	5026
20,000 lb 9072 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	103	100	102	103
	VR ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	108	108	108	108	109
	V2 ~ KIAS	127	127	127	127	127	127	127	127	127	126	126	124	121	120	119	118	117	116
	TO FL ~ FT	3447	3504	3561	3620	3681	3742	3803	3864	3926	3989	4074	4127	4103	4062	4011	3976	4267	4588
19,000 lb 8618 kg	V1 ~ KIAS	111	111	111	112	112	112	112	112	112	112	112	111	108	106	103	100	98	99
	VR ~ KIAS	111	111	111	112	112	112	112	112	112	112	112	111	108	106	105	106	106	106
	V2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	125	122	118	117	116	115	114
	TO FL ~ FT	3394	3450	3507	3566	3627	3687	3745	3805	3866	3927	4009	4057	4028	3982	3927	3886	3892	4178
18,000 lb 8165 kg	V1 ~ KIAS	111	111	111	111	111	111	111	111	112	112	112	111	108	106	103	100	97	96
	VR ~ KIAS	111	111	111	111	111	111	111	111	112	112	112	111	108	106	103	103	103	103
	V2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	125	122	118	115	114	113	112
	TO FL ~ FT	3346	3401	3458	3515	3574	3632	3691	3749	3809	3869	3949	3990	3956	3905	3845	3800	3760	3805
17,000 lb 7711 kg	V1 ~ KIAS	111	111	111	111	111	111	111	111	111	111	111	110	108	105	103	100	97	94
	VR ~ KIAS	111	111	111	111	111	111	111	111	111	111	111	110	108	105	103	100	100	100
	V2 ~ KIAS	128	128	128	128	128	128	128	127	127	127	127	125	122	119	115	112	110	110
	TO FL ~ FT	3301	3356	3412	3469	3526	3584	3642	3699	3758	3816	3892	3928	3889	3833	3768	3717	3671	3602

Figure 5.20.20

Flaps 15° Field Pressure Altitude (2000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS	122	122	122	122	122	122	122	122	122	122	123	124	125	126				
	VR ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	131	131	131				
	V2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	139	139	138				
	TOFL ~ FT	4683	4742	4811	4887	4969	5049	5133	5217	5309	5418	5699	6056	6514	7009				
27,000 lb 12,247 kg	V1 ~ KIAS	119	119	119	118	118	118	118	118	119	119	119	120	121	123	124			
	VR ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	128	128	129	129			
	V2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	137	137	136	136	135			
	TOFL ~ FT	4370	4427	4494	4564	4637	4711	4785	4863	4953	5054	5313	5632	6037	6497	7016			
26,000 lb 11,793 kg	V1 ~ KIAS	115	115	115	115	115	115	115	115	115	115	116	117	118	119	120			
	VR ~ KIAS	125	125	125	125	125	125	125	125	125	125	125	125	125	126	126			
	V2 ~ KIAS	136	136	136	136	136	136	136	136	135	135	135	135	134	133	133			
	TOFL ~ FT	4073	4125	4187	4252	4321	4391	4467	4536	4614	4709	4945	5242	5596	6009	6488			
25,000 lb 11,340 kg	V1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	113	114	115	116	118		
	VR ~ KIAS	121	121	121	121	121	121	122	122	122	122	122	122	122	122	122	123		
	V2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	131	131	130	129		
	TOFL ~ FT	3857	3919	3985	4053	4122	4190	4260	4331	4404	4493	4612	4846	5168	5533	5966	6473		
24,000 lb 10,886 kg	V1 ~ KIAS	112	112	112	113	113	113	113	113	113	113	112	110	111	112	113	114	115	
	VR ~ KIAS	118	118	118	118	118	118	118	118	118	119	119	119	119	119	119	119	120	
	V2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	130	129	128	127	127	126	
	TOFL ~ FT	3798	3859	3924	3991	4059	4126	4195	4264	4336	4422	4535	4530	4776	5106	5486	5942	6461	
23,000 lb 10,433 kg	V1 ~ KIAS	112	112	112	112	112	112	113	113	113	113	112	110	107	108	109	110	112	
	VR ~ KIAS	115	115	115	115	115	115	115	115	115	115	116	116	116	116	116	116	116	
	V2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	127	126	125	125	124	123	
	TOFL ~ FT	3738	3798	3862	3928	3994	4061	4128	4196	4266	4350	4457	4448	4430	4685	5024	5429	5896	
22,000 lb 9979 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	113	112	110	107	105	106	107	109	
	VR ~ KIAS	112	112	113	113	113	113	113	113	113	113	113	113	113	114	114	114	114	
	V2 ~ KIAS	127	127	127	126	126	126	126	126	126	126	126	125	124	123	122	122	121	
	TOFL ~ FT	3678	3737	3801	3865	3930	3996	4062	4128	4197	4279	4380	4366	4344	4348	4653	5017	5441	
21,000 lb 9525 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	110	107	104	103	104	106	107
	VR ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	111	111	111	111	111	112
	V2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125	123	122	121	120	119	119	118
	TOFL ~ FT	3620	3678	3741	3804	3868	3932	3997	4062	4129	4209	4304	4286	4259	4215	4295	4619	4992	5399
20,000 lb 9072 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	101	101	102	103
	VR ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	108	108	108	108	109	109
	V2 ~ KIAS	127	127	127	127	127	127	127	126	126	126	125	122	120	119	118	117	117	116
	TOFL ~ FT	3562	3620	3682	3744	3806	3869	3933	3997	4062	4140	4229	4207	4175	4127	4080	4232	4565	4913
19,000 lb 8618 kg	V1 ~ KIAS	111	111	112	112	112	112	112	112	112	112	111	109	107	104	101	99	99	100
	VR ~ KIAS	111	111	112	112	112	112	112	112	112	112	111	109	107	105	105	106	106	106
	V2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	125	122	119	117	116	115	114	114
	TOFL ~ FT	3508	3565	3634	3703	3748	3810	3872	3935	3999	4074	4157	4131	4094	4042	3990	3967	4156	4473
18,000 lb 8165 kg	V1 ~ KIAS	111	111	111	111	111	111	112	112	112	112	111	109	107	104	101	99	96	96
	VR ~ KIAS	111	111	111	111	111	111	112	112	112	112	111	109	107	104	103	103	103	103
	V2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	126	123	120	116	114	113	112	111
	TOFL ~ FT	3457	3514	3574	3633	3694	3754	3815	3877	3939	4013	4089	4058	4017	3961	3904	3875	3833	4062
17,000 lb 7711 kg	V1 ~ KIAS	111	111	111	111	111	111	111	111	111	112	111	109	106	104	101	98	96	93
	VR ~ KIAS	111	111	111	111	111	111	111	111	111	112	111	109	106	104	101	100	100	101
	V2 ~ KIAS	128	128	128	128	127	127	127	127	127	127	126	123	120	116	113	111	110	109
	TOFL ~ FT	3410	3466	3525	3584	3644	3703	3763	3823	3885	3956	4025	3990	3944	3883	3821	3786	3739	3684

Figure 5.20.21

Flaps 15° Field Pressure Altitude (3000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TOFL ~ FT	122 131 140 4833	122 131 140 4907	122 131 140 4985	122 131 140 5065	122 131 140 5148	122 131 140 5235	122 131 140 5322	122 131 140 5415	122 131 140 5522	123 131 140 5779	123 131 139 6115	124 131 139 6518	126 131 138 6996	126 132 138 7530				
27,000 lb 12,247 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TOFL ~ FT	119 128 138 4507	119 128 138 4576	118 128 138 4648	119 128 138 4729	118 128 138 4799	118 128 138 4880	119 128 138 4964	119 128 138 5050	119 128 138 5149	119 128 137 5387	120 128 137 5689	121 128 136 6037	122 129 136 6489	123 129 135 6985				
26,000 lb 11,793 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TOFL ~ FT	115 125 136 4207	115 125 136 4272	115 125 136 4339	115 125 136 4407	115 125 136 4477	115 125 136 4557	115 125 135 4625	115 125 135 4710	115 125 135 4802	116 125 135 5015	116 125 135 5296	117 125 134 5606	118 126 133 6000	120 126 133 6458	121 126 132 6978			
25,000 lb 11,340 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TOFL ~ FT	113 121 133 3984	113 121 133 4053	113 121 133 4123	113 121 133 4194	113 121 133 4266	113 122 133 4339	113 122 133 4411	113 122 133 4486	113 122 133 4573	112 122 133 4692	113 122 132 4897	114 122 131 5181	115 122 131 5529	116 122 130 5938	117 123 129 6417			
24,000 lb 10,886 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TOFL ~ FT	112 118 131 3922	112 118 131 3991	113 118 131 4060	113 118 131 4129	113 118 131 4200	113 118 131 4271	113 118 131 4342	113 119 131 4416	113 119 130 4501	112 119 130 4614	110 119 130 4614	110 119 129 4787	111 119 128 5102	112 119 128 5463	114 119 127 5891	115 120 126 6389		
23,000 lb 10,433 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TOFL ~ FT	112 115 128 3860	112 115 128 3927	112 115 128 3995	112 115 128 4063	112 115 128 4133	113 115 128 4203	113 115 128 4272	113 115 128 4345	113 115 128 4427	112 116 128 4535	110 116 127 4531	108 116 126 4514	108 116 126 4693	109 116 125 5010	110 116 124 5383	111 116 123 5827	112 116 122 6330	
22,000 lb 9979 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TOFL ~ FT	112 112 126 3798	112 113 126 3864	112 113 126 3931	112 113 126 3998	112 113 126 4066	112 113 126 4135	112 113 126 4203	113 113 126 4273	113 113 126 4354	112 113 126 4456	110 113 125 4448	108 113 124 4428	105 114 124 4408	106 114 123 4642	107 114 122 4982	108 114 121 5380	109 114 120 5841	
21,000 lb 9525 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TOFL ~ FT	112 112 126 3737	112 112 126 3802	112 112 126 3868	112 112 126 3934	112 112 126 4001	112 112 126 4068	112 112 126 4135	112 112 126 4204	112 112 126 4283	112 112 125 4379	110 111 123 4367	108 111 122 4343	105 111 121 4319	103 111 121 4287	104 111 120 4589	105 111 119 4944	106 112 118 5356	
20,000 lb 9072 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TOFL ~ FT	112 112 127 3677	112 112 127 3741	112 112 127 3806	112 112 127 3871	112 112 126 3936	112 112 126 4002	112 112 126 4068	112 112 126 4135	112 112 126 4212	112 112 125 4302	110 110 123 4287	107 108 120 4259	105 108 119 4230	102 108 119 4185	100 108 118 4208	102 109 117 4520	103 109 116 4881	
19,000 lb 8618 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TOFL ~ FT	111 111 127 3622	112 112 127 3685	112 112 127 3747	112 112 127 3811	112 112 127 3875	112 112 127 3940	112 112 127 4004	112 112 127 4070	112 112 126 4145	112 112 125 4229	109 109 123 4210	107 107 120 4178	105 105 117 4145	102 105 116 4095	100 106 115 4063	98 106 115 4122	99 106 114 4446	
18,000 lb 8165 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TOFL ~ FT	111 111 127 3568	111 111 127 3630	111 111 127 3692	111 111 127 3755	112 112 127 3818	112 112 127 3881	112 112 127 3944	112 112 127 4009	112 112 127 4082	111 111 126 4160	109 109 123 4137	107 107 120 4101	105 105 117 4062	102 103 114 4008	100 103 113 3971	97 103 112 3934	96 103 112 4042	
17,000 lb 7711 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TOFL ~ FT	111 111 127 3519	111 111 127 3580	111 111 127 3642	111 111 127 3703	111 111 127 3765	111 111 127 3827	111 111 127 3889	112 112 127 3952	112 112 127 4023	111 111 126 4096	109 109 123 4068	107 107 120 4028	105 105 117 3984	102 102 114 3926	99 100 111 3883	97 100 110 3840	94 100 109 3799	

Figure 5.20.22

Flaps 15° Field Pressure Altitude (4000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS	122	122	122	122	122	122	122	122	123	123	124	125	126					
	VR ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	131	132					
	V2 ~ KIAS	140	140	140	140	140	140	140	140	140	139	139	138	138					
	TOFL ~ FT	4999	5089	5173	5261	5352	5435	5522	5632	5879	6202	6591	7010	7534					
27,000 lb 12,247 kg	V1 ~ KIAS	119	119	119	119	119	119	119	119	119	120	121	122	123					
	VR ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	129	129					
	V2 ~ KIAS	138	138	138	138	138	138	138	138	137	137	137	136	135					
	TOFL ~ FT	4664	4749	4827	4908	4993	5068	5149	5251	5480	5771	6105	6502	6979					
26,000 lb 11,793 kg	V1 ~ KIAS	115	115	115	115	115	115	115	115	116	116	117	118	119	120				
	VR ~ KIAS	125	125	125	125	125	125	125	125	125	125	125	126	126	126				
	V2 ~ KIAS	136	136	135	135	135	135	135	135	135	135	134	134	133	132				
	TOFL ~ FT	4351	4424	4497	4574	4656	4726	4801	4896	5106	5373	5671	6013	6460	6956				
25,000 lb 11,340 kg	V1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	114	114	115	117	118			
	VR ~ KIAS	121	121	121	121	122	122	122	122	122	122	122	122	122	123	123			
	V2 ~ KIAS	133	133	133	133	133	133	133	133	133	132	132	131	130	130	129			
	TOFL ~ FT	4121	4199	4274	4349	4425	4496	4569	4656	4776	4974	5244	5548	5934	6390	6903			
24,000 lb 10,886 kg	V1 ~ KIAS	112	113	113	113	113	113	113	113	112	111	110	111	112	113	114			
	VR ~ KIAS	118	118	118	118	118	119	119	119	119	119	119	119	119	119	120			
	V2 ~ KIAS	131	131	131	131	131	130	130	130	130	130	129	129	128	127	126			
	TOFL ~ FT	4058	4133	4207	4281	4356	4425	4497	4583	4697	4711	4846	5127	5469	5869	6342			
23,000 lb 10,433 kg	V1 ~ KIAS	112	112	112	113	113	113	113	113	112	110	108	107	108	109	110	112		
	VR ~ KIAS	115	115	115	115	115	115	115	115	116	116	116	116	116	116	116	116		
	V2 ~ KIAS	128	128	128	128	128	128	128	128	128	127	126	126	125	124	124	123		
	TOFL ~ FT	3992	4067	4139	4212	4285	4354	4424	4507	4616	4627	4618	4706	5020	5370	5787	6268		
22,000 lb 9979 kg	V1 ~ KIAS	112	112	112	112	112	113	113	113	112	110	108	106	105	106	108	109		
	VR ~ KIAS	112	113	113	113	113	113	113	113	113	113	113	114	114	114	114	114		
	V2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	125	124	123	122	121	121		
	TOFL ~ FT	3928	4000	4071	4143	4215	4282	4351	4432	4536	4542	4530	4513	4651	4970	5340	5775		
21,000 lb 9525 kg	V1 ~ KIAS	112	112	112	112	112	112	112	113	112	110	108	106	104	103	105	106		
	VR ~ KIAS	112	112	112	112	112	112	112	113	112	111	111	111	111	111	111	111		
	V2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	122	122	121	120	119	118		
	TOFL ~ FT	3864	3936	4006	4075	4146	4212	4280	4359	4457	4460	4444	4423	4400	4584	4917	5302		
20,000 lb 9072 kg	V1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	101	101	102	103	
	VR ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	108	108	108	109	109	109	
	V2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	120	120	119	118	117	117	116	
	TOFL ~ FT	3802	3872	3940	4009	4078	4143	4210	4287	4379	4378	4358	4333	4306	4266	4496	4839	5236	
19,000 lb 8618 kg	V1 ~ KIAS	111	112	112	112	112	112	112	112	112	110	108	106	103	101	98	99	100	
	VR ~ KIAS	111	112	112	112	112	112	112	112	112	110	108	106	105	106	106	106	106	
	V2 ~ KIAS	127	127	127	127	127	126	126	126	125	123	120	118	116	116	115	114	113	
	TOFL ~ FT	3743	3811	3878	3946	4013	4077	4143	4218	4305	4299	4276	4247	4215	4170	4140	4412	4755	
18,000 lb 8165 kg	V1 ~ KIAS	111	111	111	112	112	112	112	112	112	110	108	105	103	100	98	95	97	
	VR ~ KIAS	111	111	111	112	112	112	112	112	112	110	108	105	103	103	103	103	103	
	V2 ~ KIAS	127	127	127	127	127	127	127	127	126	123	121	118	115	114	113	112	111	
	TOFL ~ FT	3687	3755	3820	3886	3953	4015	4080	4153	4234	4224	4197	4164	4127	4077	4042	4023	4323	
17,000 lb 7711 kg	V1 ~ KIAS	111	111	111	111	111	112	112	112	111	109	107	105	103	100	98	95	93	
	VR ~ KIAS	111	111	111	111	111	112	112	112	111	109	107	105	103	101	100	100	101	
	V2 ~ KIAS	127	127	127	127	127	127	127	127	126	124	121	118	115	112	110	110	109	
	TOFL ~ FT	3636	3702	3767	3832	3897	3958	4021	4093	4169	4154	4123	4085	4043	3989	3948	3907	3914	

Figure 5.20.23

Flaps 15° Field Pressure Altitude (5000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS	122	122	122	122	122	122	122	123	123	124	125	126						
	VR ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	132						
	V2 ~ KIAS	140	140	140	140	140	140	140	140	139	139	138	138						
	TO FL ~ FT	5176	5284	5370	5475	5551	5630	5754	5991	6302	6693	7090	7541						
27,000 lb 12,247 kg	V1 ~ KIAS	119	119	119	119	119	119	119	119	120	121	122	122	123					
	VR ~ KIAS	128	128	128	128	128	128	128	128	128	128	129	129	129					
	V2 ~ KIAS	138	138	138	138	138	138	138	137	137	137	136	136	135					
	TO FL ~ FT	4829	4929	5008	5105	5176	5248	5366	5583	5862	6198	6575	6983	7513					
26,000 lb 11,793 kg	V1 ~ KIAS	115	115	115	115	115	115	115	116	116	117	118	119	120					
	VR ~ KIAS	125	125	125	125	125	125	125	125	125	125	126	126	126					
	V2 ~ KIAS	135	135	135	135	135	135	135	135	135	134	134	133	133					
	TO FL ~ FT	4503	4595	4670	4761	4826	4894	5004	5204	5459	5759	6081	6465	6946					
25,000 lb 11,340 kg	V1 ~ KIAS	113	113	113	113	113	113	113	112	113	114	114	115	116	117				
	VR ~ KIAS	121	121	121	122	122	122	122	122	122	122	122	122	123	123				
	V2 ~ KIAS	133	133	133	133	133	133	133	132	132	132	131	130	130	129				
	TO FL ~ FT	4266	4350	4427	4510	4581	4653	4754	4822	5053	5326	5613	5942	6388	6877				
24,000 lb 10,886 kg	V1 ~ KIAS	112	113	113	113	113	113	113	112	110	110	111	112	113	114	115			
	VR ~ KIAS	118	118	118	118	119	119	119	119	119	119	119	119	119	120	120			
	V2 ~ KIAS	131	130	130	130	130	130	130	130	130	129	129	128	127	127	126			
	TO FL ~ FT	4200	4282	4358	4439	4509	4580	4678	4724	4755	4923	5189	5480	5865	6322	6823			
23,000 lb 10,433 kg	V1 ~ KIAS	112	112	112	113	113	113	113	112	110	108	107	108	109	110	111	112		
	VR ~ KIAS	115	115	115	115	115	115	115	116	116	116	116	116	116	116	116	117		
	V2 ~ KIAS	128	128	128	128	128	128	128	127	127	126	126	125	125	124	123	122		
	TO FL ~ FT	4132	4213	4287	4366	4435	4505	4601	4643	4670	4709	4764	5033	5372	5762	6225	6737		
22,000 lb 9979 kg	V1 ~ KIAS	112	112	112	112	113	113	113	111	110	108	106	105	106	107	108	109		
	VR ~ KIAS	113	113	113	113	113	113	113	113	113	114	114	114	114	114	114	114		
	V2 ~ KIAS	126	126	126	126	126	126	126	125	125	125	124	123	122	122	121	120		
	TO FL ~ FT	4065	4143	4216	4294	4362	4431	4524	4562	4585	4619	4603	4664	4975	5326	5733	6218		
21,000 lb 9525 kg	V1 ~ KIAS	112	112	112	112	112	112	113	111	110	108	106	104	103	104	105	106		
	VR ~ KIAS	112	112	112	112	112	112	113	111	111	111	111	111	111	111	111	112		
	V2 ~ KIAS	126	126	126	126	126	126	126	124	123	122	122	121	120	119	119	118		
	TO FL ~ FT	3999	4076	4147	4223	4290	4358	4449	4484	4502	4532	4512	4486	4591	4909	5271	5696		
20,000 lb 9072 kg	V1 ~ KIAS	112	112	112	112	112	112	112	111	110	108	106	104	101	101	102	103		
	VR ~ KIAS	112	112	112	112	112	112	112	111	110	108	108	108	108	108	109	109		
	V2 ~ KIAS	126	126	126	126	126	126	126	124	122	120	120	119	118	117	117	116		
	TO FL ~ FT	3934	4009	4079	4153	4219	4286	4374	4405	4420	4444	4421	4392	4371	4489	4819	5191		
19,000 lb 8618 kg	V1 ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	101	99	98	100		
	VR ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	105	106	106	106	106		
	V2 ~ KIAS	127	126	126	126	126	126	126	125	123	120	118	117	116	115	114	114		
	TO FL ~ FT	3872	3946	4015	4087	4152	4218	4303	4331	4341	4361	4334	4301	4275	4250	4394	4721		
18,000 lb 8165 kg	V1 ~ KIAS	111	111	112	112	112	112	112	111	109	108	106	104	101	99	96	96		
	VR ~ KIAS	111	111	112	112	112	112	112	111	109	108	106	104	103	103	103	103		
	V2 ~ KIAS	127	127	127	127	127	127	126	125	123	121	118	115	114	113	112	111		
	TO FL ~ FT	3815	3886	3954	4024	4089	4153	4236	4260	4266	4281	4250	4213	4182	4152	4117	4297		
17,000 lb 7711 kg	V1 ~ KIAS	111	111	111	111	112	112	112	111	109	108	106	103	101	99	96	94		
	VR ~ KIAS	111	111	111	111	112	112	112	111	109	108	106	103	101	100	100	101		
	V2 ~ KIAS	127	127	127	127	127	127	127	125	123	121	118	116	113	111	110	109		
	TO FL ~ FT	3761	3831	3898	3967	4030	4094	4174	4195	4196	4205	4171	4130	4094	4058	4017	3980		

Figure 5.20.24

Flaps 15° Field Pressure Altitude (6000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS	122	122	122	122	122	122	123	123	124	125	126							
	VR ~ KIAS	131	131	131	131	131	131	131	131	131	132	132							
	V2 ~ KIAS	140	140	140	140	140	140	140	139	139	138	138							
	TOFL ~ FT	5280	5407	5530	5653	5758	5909	6145	6451	6819	7214	7646							
27,000 lb 12,247 kg	V1 ~ KIAS	118	119	119	119	119	119	119	120	121	122	122	123						
	VR ~ KIAS	128	128	128	128	128	128	128	128	129	129	129	129						
	V2 ~ KIAS	138	138	138	138	138	137	137	137	137	136	136	135						
	TOFL ~ FT	4923	5041	5155	5272	5369	5510	5726	5996	6313	6687	7079	7538						
26,000 lb 11,793 kg	V1 ~ KIAS	115	115	115	115	115	115	116	116	117	118	119	120	121					
	VR ~ KIAS	125	125	125	125	125	125	125	125	126	126	126	126	126					
	V2 ~ KIAS	135	135	135	135	135	135	135	134	134	134	133	133	132					
	TOFL ~ FT	4588	4699	4806	4915	5007	5137	5336	5582	5866	6184	6554	6969	7490					
25,000 lb 11,340 kg	V1 ~ KIAS	113	113	113	113	113	112	112	113	114	114	115	116	117					
	VR ~ KIAS	121	121	122	122	122	122	122	122	122	122	122	123	123					
	V2 ~ KIAS	133	133	133	133	133	133	132	132	132	131	131	130	129					
	TOFL ~ FT	4366	4466	4566	4667	4761	4820	4944	5168	5426	5710	6024	6409	6881					
24,000 lb 10,886 kg	V1 ~ KIAS	113	113	113	113	113	112	111	110	110	111	111	112	113	114				
	VR ~ KIAS	118	118	118	118	119	119	119	119	119	119	119	119	120	119				
	V2 ~ KIAS	131	130	130	130	130	130	130	129	129	129	128	127	127	126				
	TOFL ~ FT	4299	4397	4495	4593	4685	4742	4782	4828	5020	5278	5558	5889	6323	6835				
23,000 lb 10,433 kg	V1 ~ KIAS	112	112	113	113	113	112	111	110	109	107	108	109	110	111	112			
	VR ~ KIAS	115	115	115	115	115	115	116	116	116	116	116	116	116	116	117			
	V2 ~ KIAS	128	128	128	128	128	128	127	127	126	126	125	125	124	123	123			
	TOFL ~ FT	4232	4327	4422	4518	4608	4663	4699	4741	4807	4848	5106	5398	5771	6206	6706			
22,000 lb 9979 kg	V1 ~ KIAS	112	112	112	113	113	112	111	110	108	107	105	106	107	108	109	110		
	VR ~ KIAS	113	113	113	113	113	113	113	113	114	114	114	114	114	114	114	114		
	V2 ~ KIAS	126	126	126	126	126	126	125	125	125	124	123	123	122	121	120	120		
	TOFL ~ FT	4164	4257	4350	4443	4531	4584	4617	4655	4715	4709	4734	5006	5338	5726	6182	6693		
21,000 lb 9525 kg	V1 ~ KIAS	112	112	112	112	112	112	111	110	108	106	104	103	104	105	106	107		
	VR ~ KIAS	112	112	112	112	112	112	111	111	111	111	111	111	111	111	112	112		
	V2 ~ KIAS	126	126	126	126	126	125	123	123	122	122	121	120	120	119	118	117		
	TOFL ~ FT	4098	4189	4279	4370	4456	4506	4537	4571	4626	4615	4594	4625	4918	5265	5669	6139		
20,000 lb 9072 kg	V1 ~ KIAS	112	112	112	112	112	112	111	109	108	106	104	102	100	101	102	104		
	VR ~ KIAS	112	112	112	112	112	112	111	109	108	108	108	108	109	109	109	109		
	V2 ~ KIAS	126	126	126	126	126	125	124	122	120	120	119	118	118	117	116	116		
	TOFL ~ FT	4033	4121	4209	4297	4381	4430	4457	4487	4537	4523	4498	4476	4508	4813	5171	5577		
19,000 lb 8618 kg	V1 ~ KIAS	112	112	112	112	112	112	110	109	108	106	104	102	100	98	99	100		
	VR ~ KIAS	112	112	112	112	112	112	110	109	108	106	105	106	106	106	106	106		
	V2 ~ KIAS	127	126	126	126	126	125	124	122	121	118	117	116	115	115	114	113		
	TOFL ~ FT	3971	4057	4143	4228	4311	4357	4381	4407	4451	4434	4405	4379	4365	4393	4708	5062		
18,000 lb 8165 kg	V1 ~ KIAS	111	111	112	112	112	111	110	109	108	106	104	102	100	97	96	97		
	VR ~ KIAS	111	111	112	112	112	111	110	109	108	106	104	103	103	103	103	103		
	V2 ~ KIAS	127	127	127	127	127	126	124	122	121	118	116	114	113	112	112	111		
	TOFL ~ FT	3914	3997	4080	4164	4244	4288	4309	4331	4370	4348	4316	4286	4267	4234	4289	4599		
17,000 lb 7711 kg	V1 ~ KIAS	111	111	111	112	112	111	110	109	108	106	104	102	100	97	95	93		
	VR ~ KIAS	111	111	111	112	112	111	110	109	108	106	104	102	100	100	101	101		
	V2 ~ KIAS	127	127	127	127	127	126	124	123	121	119	116	113	111	110	109	109		
	TOFL ~ FT	3861	3942	4023	4104	4183	4225	4242	4259	4293	4267	4231	4197	4172	4133	4103	4172		

Figure 5.20.25

Flaps 15° Field Pressure Altitude (7000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS	121	121	122	122	122	123	123	124	125	126								
	VR ~ KIAS	131	131	131	131	131	131	131	131	131	132								
	V2 ~ KIAS	140	140	140	140	140	139	139	139	138	138								
	TO FL ~ FT	5291	5488	5700	5914	6102	6340	6614	6955	7334	7776								
27,000 lb 12,247 kg	V1 ~ KIAS	117	118	118	119	119	120	120	121	121	122	123							
	VR ~ KIAS	128	128	128	128	128	128	128	128	129	129	129							
	V2 ~ KIAS	138	138	138	138	137	137	137	136	136	136	135							
	TO FL ~ FT	4931	5119	5313	5513	5687	5902	6143	6443	6795	7198	7630							
26,000 lb 11,793 kg	V1 ~ KIAS	114	114	115	115	116	116	117	117	118	119	119	120						
	VR ~ KIAS	125	125	125	125	125	125	125	125	126	126	126	126						
	V2 ~ KIAS	136	136	135	135	135	135	134	134	134	133	133	132						
	TO FL ~ FT	4594	4769	4954	5140	5301	5499	5717	5982	6284	6663	7054	7512						
25,000 lb 11,340 kg	V1 ~ KIAS	113	113	113	113	112	112	113	114	114	115	116	117	117					
	VR ~ KIAS	121	121	122	122	122	122	122	122	122	122	123	123	123					
	V2 ~ KIAS	133	133	133	133	132	132	132	131	131	131	130	130	129					
	TO FL ~ FT	4466	4593	4727	4854	4913	5094	5293	5533	5802	6123	6487	6901	7440					
24,000 lb 10,886 kg	V1 ~ KIAS	113	113	113	113	112	110	109	110	111	111	112	113	114					
	VR ~ KIAS	118	118	118	119	119	119	119	119	119	119	119	120	120					
	V2 ~ KIAS	131	131	130	130	130	130	129	129	128	128	128	127	126					
	TO FL ~ FT	4401	4524	4653	4776	4811	4842	4901	5120	5363	5651	5962	6343	6839					
23,000 lb 10,433 kg	V1 ~ KIAS	112	113	113	113	111	110	109	108	107	108	109	109	110	111				
	VR ~ KIAS	115	115	115	116	116	116	116	116	116	116	116	116	116	117				
	V2 ~ KIAS	128	128	128	128	127	127	127	126	126	125	125	124	124	123				
	TO FL ~ FT	4334	4453	4578	4696	4729	4757	4792	4821	4931	5192	5467	5793	6243	6692				
22,000 lb 9979 kg	V1 ~ KIAS	112	112	112	112	111	110	109	108	106	105	106	106	107	109	110			
	VR ~ KIAS	113	113	113	113	113	113	113	113	114	114	114	114	114	114	114			
	V2 ~ KIAS	127	126	126	126	125	125	125	124	124	123	123	122	121	121	120			
	TO FL ~ FT	4268	4382	4503	4616	4647	4673	4705	4729	4749	4814	5071	5363	5730	6169	6662			
21,000 lb 9525 kg	V1 ~ KIAS	112	112	112	112	111	110	109	107	106	104	103	103	104	105	106			
	VR ~ KIAS	112	112	112	112	111	111	111	111	111	111	111	111	112	112	112			
	V2 ~ KIAS	126	126	126	125	124	123	123	122	122	121	120	120	119	119	118			
	TO FL ~ FT	4204	4314	4430	4539	4567	4590	4619	4640	4655	4684	4679	4942	5274	5657	6104			
20,000 lb 9072 kg	V1 ~ KIAS	112	112	112	112	111	110	109	107	106	104	102	100	101	102	103	104		
	VR ~ KIAS	112	112	112	112	111	110	109	108	108	108	108	109	109	109	109	109		
	V2 ~ KIAS	127	126	126	126	124	123	121	120	119	119	118	118	117	117	116	115		
	TO FL ~ FT	4140	4246	4357	4462	4488	4508	4534	4551	4563	4587	4568	4560	4830	5166	5556	6005		
19,000 lb 8618 kg	V1 ~ KIAS	112	112	112	112	111	110	109	107	106	104	102	100	98	99	100	101		
	VR ~ KIAS	112	112	112	112	111	110	109	107	106	106	106	106	106	106	106	106		
	V2 ~ KIAS	127	127	126	126	125	123	121	120	118	117	116	116	115	114	114	113		
	TO FL ~ FT	4080	4182	4289	4389	4412	4430	4452	4465	4473	4492	4470	4457	4445	4708	5052	5437		
18,000 lb 8165 kg	V1 ~ KIAS	111	112	112	112	111	109	108	107	105	104	102	100	98	96	96	97		
	VR ~ KIAS	111	112	112	112	111	109	108	107	105	104	103	103	103	103	103	104		
	V2 ~ KIAS	127	127	127	126	125	123	122	120	118	116	114	113	113	112	111	110		
	TO FL ~ FT	4024	4122	4224	4320	4341	4356	4375	4384	4387	4402	4376	4358	4341	4316	4590	4930		
17,000 lb 7711 kg	V1 ~ KIAS	111	111	111	111	110	109	108	107	105	104	102	100	98	95	93	94		
	VR ~ KIAS	111	111	111	111	110	109	108	107	105	104	102	100	101	101	101	101		
	V2 ~ KIAS	128	127	127	126	125	124	122	120	118	116	113	111	110	110	109	108		
	TO FL ~ FT	3973	4067	4165	4256	4275	4286	4302	4307	4306	4316	4286	4263	4240	4209	4165	4464		

Figure 5.20.26

Flaps 15° Field Pressure Altitude (8000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS	121	122	122	123	123	124	124	125	126									
	VR ~ KIAS	131	131	131	131	131	131	131	131	132									
	V2 ~ KIAS	140	140	140	139	139	139	139	138	138									
	TOFL ~ FT	5568	5808	6051	6301	6557	6845	7145	7513	7933									
27,000 lb 12,247 kg	V1 ~ KIAS	118	118	119	119	120	120	121	122	122	123								
	VR ~ KIAS	128	128	128	128	128	128	128	128	129	129								
	V2 ~ KIAS	138	138	137	137	137	137	136	136	136	135								
	TOFL ~ FT	5192	5416	5640	5866	6094	6342	6610	6958	7343	7772								
26,000 lb 11,793 kg	V1 ~ KIAS	114	115	115	116	116	117	117	118	119	119	120							
	VR ~ KIAS	125	125	125	125	125	125	125	125	126	126	126							
	V2 ~ KIAS	136	135	135	135	134	134	134	133	133	133	132							
	TOFL ~ FT	4844	5052	5259	5468	5675	5899	6134	6433	6795	7184	7615							
25,000 lb 11,340 kg	V1 ~ KIAS	113	113	112	112	113	113	114	114	115	116	117	117						
	VR ~ KIAS	122	122	122	122	122	122	122	122	123	123	123	123						
	V2 ~ KIAS	133	133	132	132	132	132	131	131	131	130	130	129						
	TOFL ~ FT	4696	4835	4912	5066	5257	5460	5671	5937	6245	6607	6997	7439						
24,000 lb 10,886 kg	V1 ~ KIAS	113	113	112	111	110	110	110	111	111	112	113	114	115					
	VR ~ KIAS	118	119	119	119	119	119	119	119	119	120	120	120	120					
	V2 ~ KIAS	131	130	130	130	129	129	129	128	128	128	127	127	126					
	TOFL ~ FT	4625	4759	4832	4877	4913	5054	5248	5488	5764	6071	6430	6832	7348					
23,000 lb 10,433 kg	V1 ~ KIAS	113	113	112	111	110	108	107	107	108	109	109	110	111					
	VR ~ KIAS	115	115	115	116	116	116	116	116	116	116	116	116	117					
	V2 ~ KIAS	128	128	127	127	127	126	126	126	125	125	124	124	123					
	TOFL ~ FT	4552	4681	4750	4792	4825	4853	4874	5047	5297	5569	5875	6233	6701					
22,000 lb 9979 kg	V1 ~ KIAS	112	113	112	111	109	108	107	106	105	106	106	107	108	109				
	VR ~ KIAS	113	113	113	113	113	113	113	114	114	114	114	114	114	114				
	V2 ~ KIAS	126	126	126	125	125	125	124	124	123	123	122	121	121	120				
	TOFL ~ FT	4480	4604	4669	4708	4738	4763	4781	4820	4912	5166	5441	5756	6181	6661				
21,000 lb 9525 kg	V1 ~ KIAS	112	112	112	111	109	108	107	106	105	103	103	104	105	106	107			
	VR ~ KIAS	112	112	112	111	111	111	111	111	111	111	111	111	112	112	112			
	V2 ~ KIAS	126	126	125	123	123	122	122	121	121	121	120	119	119	118	117			
	TOFL ~ FT	4409	4528	4590	4625	4653	4675	4690	4724	4783	4779	5020	5304	5671	6104	6595			
20,000 lb 9072 kg	V1 ~ KIAS	112	112	111	110	109	108	107	105	104	103	101	101	102	103	104			
	VR ~ KIAS	112	112	111	110	109	108	108	108	108	109	109	109	109	109	109			
	V2 ~ KIAS	126	126	125	123	122	120	120	119	119	118	118	117	117	116	115			
	TOFL ~ FT	4339	4454	4512	4543	4568	4587	4600	4630	4683	4675	4670	4853	5180	5556	5994			
19,000 lb 8618 kg	V1 ~ KIAS	112	112	111	110	109	108	107	105	104	102	101	99	98	99	100			
	VR ~ KIAS	112	112	111	110	109	108	107	105	106	106	106	106	106	106	106			
	V2 ~ KIAS	127	126	125	124	122	121	119	117	117	116	116	115	114	114	113			
	TOFL ~ FT	4273	4383	4437	4465	4487	4503	4513	4539	4586	4575	4566	4556	4724	5058	5434			
18,000 lb 8165 kg	V1 ~ KIAS	112	112	111	110	109	108	106	105	104	102	100	99	96	96	97			
	VR ~ KIAS	112	112	111	110	109	108	106	105	104	103	103	103	103	103	104			
	V2 ~ KIAS	127	127	125	124	122	121	119	117	116	114	114	113	112	111	111			
	TOFL ~ FT	4211	4316	4366	4392	4410	4423	4430	4452	4494	4478	4465	4450	4436	4598	4932			
17,000 lb 7711 kg	V1 ~ KIAS	111	112	111	110	109	107	106	105	104	102	100	98	96	94	93			
	VR ~ KIAS	111	112	111	110	109	107	106	105	104	102	101	101	101	101	101			
	V2 ~ KIAS	127	127	126	124	123	121	119	118	116	114	112	111	110	109	108			
	TOFL ~ FT	4155	4255	4301	4323	4338	4348	4353	4369	4406	4386	4368	4349	4329	4284	4462			

Figure 5.20.27

Flaps 15°   Field Pressure Altitude (9000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TO FL ~ FT	122 131 140 6008	122 131 140 6239	123 131 139 6502	123 131 139 6789	124 131 139 7079	124 131 138 7388	125 131 138 7709											
27,000 lb 12,247 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TO FL ~ FT	119 128 138 5603	119 128 137 5812	120 128 137 6049	120 128 137 6298	121 128 136 6556	121 128 136 6839	122 128 136 7140	122 129 135 7505	123 129 135 7917									
26,000 lb 11,793 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TO FL ~ FT	115 125 135 5227	116 125 135 5420	116 125 135 5636	117 125 134 5860	117 125 134 6089	117 125 134 6332	118 125 133 6598	119 126 133 6941	119 126 133 7316	120 126 132 7750								
25,000 lb 11,340 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TO FL ~ FT	113 122 133 4941	112 122 132 5024	112 122 132 5221	113 122 132 5427	113 122 131 5632	114 122 131 5852	114 122 131 6086	115 122 130 6377	116 122 130 6728	116 123 130 7122	117 123 129 7540							
24,000 lb 10,886 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TO FL ~ FT	113 119 130 4861	111 119 130 4898	110 119 130 4939	109 119 129 5024	110 119 129 5214	110 119 129 5413	111 119 128 5623	111 119 128 5885	112 119 127 6183	113 120 127 6545	114 120 127 6924	114 120 126 7375						
23,000 lb 10,433 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TO FL ~ FT	112 115 128 4779	111 116 127 4814	110 116 127 4852	109 116 127 4887	108 116 126 4914	107 116 126 4981	107 116 125 5172	108 116 125 5406	108 116 125 5671	109 116 124 5980	110 116 124 6352	111 117 123 6725	112 117 122 7231					
22,000 lb 9979 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TO FL ~ FT	112 113 126 4698	111 113 125 4730	110 113 125 4765	109 113 125 4797	108 113 124 4821	106 113 124 4841	105 114 124 4871	105 114 123 5019	106 114 123 5261	106 114 122 5538	107 114 122 5836	108 114 121 6198	109 114 120 6668	110 114 120 7189				
21,000 lb 9525 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TO FL ~ FT	112 112 125 4619	111 111 124 4648	110 111 123 4680	109 111 122 4709	107 111 122 4730	106 111 122 4747	105 111 121 4774	104 111 121 4800	102 111 120 4854	103 111 120 5111	104 111 119 5379	105 112 119 5696	106 112 118 6109	107 112 117 6596				
20,000 lb 9072 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TO FL ~ FT	112 112 125 4541	111 111 124 4567	110 110 122 4596	108 108 121 4622	107 108 120 4640	106 108 120 4654	105 108 119 4678	104 108 119 4700	102 108 118 4725	101 109 118 4762	101 109 117 4927	101 109 117 5211	102 109 116 5569	103 109 116 5989	104 109 115 6477			
19,000 lb 8618 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TO FL ~ FT	112 112 126 4466	111 111 124 4490	109 109 123 4516	108 108 121 4538	107 107 120 4553	106 106 118 4565	105 105 117 4586	103 105 117 4603	102 106 116 4624	101 106 116 4656	99 106 115 4649	98 106 115 4751	99 106 114 5068	100 106 113 5436	101 106 113 5859			
18,000 lb 8165 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TO FL ~ FT	112 112 126 4396	110 110 124 4417	109 109 123 4439	108 108 121 4459	107 107 120 4471	106 106 118 4480	105 105 117 4497	103 103 115 4511	102 103 114 4527	100 103 114 4553	99 103 113 4542	97 103 112 4527	96 103 112 4616	97 104 111 4937	98 104 110 5300			
17,000 lb 7711 kg	V1 ~ KIAS VR ~ KIAS V2 ~ KIAS TO FL ~ FT	111 111 126 4331	110 110 125 4349	109 109 123 4368	108 108 122 4384	107 107 120 4394	105 105 118 4399	104 104 117 4414	103 103 115 4423	102 102 113 4434	100 101 112 4455	99 101 111 4439	97 101 110 4420	94 101 109 4399	93 101 109 4475	94 101 108 4788			

Figure 5.20.28

Flaps 15° Field Pressure Altitude (10,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS	123	123	124	124	125	125												
	VR ~ KIAS	131	131	131	131	131	131												
	V2 ~ KIAS	139	139	139	139	138	138												
	TOFL ~ FT	6470	6729	7031	7338	7652	7980												
27,000 lb 12,247 kg	V1 ~ KIAS	119	120	120	121	121	122	122											
	VR ~ KIAS	128	128	128	128	128	129	129											
	V2 ~ KIAS	137	137	136	136	136	136	135											
	TOFL ~ FT	6021	6249	6507	6794	7087	7390	7708											
26,000 lb 11,793 kg	V1 ~ KIAS	116	116	117	117	118	118	119	119										
	VR ~ KIAS	125	125	125	125	125	125	126	126										
	V2 ~ KIAS	135	134	134	134	133	133	133	133										
	TOFL ~ FT	5611	5817	6050	6295	6549	6831	7130	7499										
25,000 lb 11,340 kg	V1 ~ KIAS	112	113	113	114	114	115	115	116	116	117								
	VR ~ KIAS	122	122	122	122	122	122	122	122	123	123								
	V2 ~ KIAS	132	132	131	131	131	131	130	130	130	129								
	TOFL ~ FT	5200	5388	5599	5819	6048	6289	6547	6892	7272	7693								
24,000 lb 10,886 kg	V1 ~ KIAS	111	109	110	110	111	111	112	112	113	114	114							
	VR ~ KIAS	119	119	119	119	119	119	119	119	120	120	120							
	V2 ~ KIAS	130	129	129	129	128	128	128	127	127	127	126							
	TOFL ~ FT	4970	5004	5183	5385	5591	5809	6039	6333	6683	7066	7485							
23,000 lb 10,433 kg	V1 ~ KIAS	111	109	108	107	107	108	108	109	109	110	111	111						
	VR ~ KIAS	116	116	116	116	116	116	116	116	116	117	117	117						
	V2 ~ KIAS	127	127	126	126	126	125	125	125	124	124	123	123						
	TOFL ~ FT	4883	4914	4948	4980	5144	5340	5545	5808	6104	6465	6826	7269						
22,000 lb 9979 kg	V1 ~ KIAS	110	109	108	107	106	105	105	106	106	107	108	108	109					
	VR ~ KIAS	113	113	113	113	114	114	114	114	114	114	114	114	114					
	V2 ~ KIAS	125	125	124	124	124	123	123	122	122	122	121	120	120					
	TOFL ~ FT	4796	4825	4856	4884	4909	4960	5149	5388	5654	5954	6291	6753	7214					
21,000 lb 9525 kg	V1 ~ KIAS	110	109	108	107	105	104	103	103	103	104	105	105	106	107				
	VR ~ KIAS	111	111	111	111	111	111	111	111	112	112	112	112	112	112				
	V2 ~ KIAS	123	123	122	122	121	121	121	120	120	119	119	118	118	117				
	TOFL ~ FT	4711	4737	4765	4790	4812	4837	4856	4977	5219	5487	5784	6141	6633	7124				
20,000 lb 9072 kg	V1 ~ KIAS	110	109	108	107	105	104	103	102	101	101	101	102	103	104				
	VR ~ KIAS	110	109	108	108	108	108	108	108	109	109	109	109	109	109				
	V2 ~ KIAS	123	122	120	120	119	119	119	118	118	117	117	116	116	115				
	TOFL ~ FT	4627	4650	4675	4697	4716	4738	4754	4800	4863	5022	5293	5603	6012	6499				
19,000 lb 8618 kg	V1 ~ KIAS	110	109	108	106	105	104	103	102	101	99	98	99	100	101				
	VR ~ KIAS	110	109	108	106	105	105	106	106	106	106	106	106	106	106				
	V2 ~ KIAS	123	122	120	119	117	117	116	116	116	115	115	114	113	113				
	TOFL ~ FT	4546	4567	4589	4608	4624	4643	4656	4697	4754	4757	4827	5108	5461	5861				
18,000 lb 8165 kg	V1 ~ KIAS	110	109	107	106	105	104	103	102	101	99	97	95	96	97				
	VR ~ KIAS	110	109	107	106	105	104	103	103	103	103	103	104	104	104				
	V2 ~ KIAS	123	122	120	119	117	116	114	114	114	113	112	112	111	110				
	TOFL ~ FT	4470	4488	4507	4523	4536	4551	4562	4598	4649	4647	4634	4649	4962	5307				
17,000 lb 7711 kg	V1 ~ KIAS	110	108	107	106	105	104	102	101	100	99	97	95	93	94				
	VR ~ KIAS	110	108	107	106	105	104	102	102	101	101	101	101	101	101				
	V2 ~ KIAS	124	122	121	119	117	116	114	113	112	111	110	109	109	108				
	TOFL ~ FT	4399	4414	4430	4443	4453	4465	4472	4504	4548	4542	4525	4508	4502	4803				

Figure 5.20.29

Flaps 15° Field Pressure Altitude (11,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS	124	124	125	125														
	VR ~ KIAS	131	131	131	131														
	V2 ~ KIAS	139	139	138	138														
	TO FL ~ FT	6999	7286	7601	7934														
27,000 lb 12,247 kg	V1 ~ KIAS	120	121	121	122	122													
	VR ~ KIAS	128	128	128	128	129													
	V2 ~ KIAS	136	136	136	136	135													
	TO FL ~ FT	6480	6740	7039	7348	7658													
26,000 lb 11,793 kg	V1 ~ KIAS	117	117	118	118	119	119	120											
	VR ~ KIAS	125	125	125	125	126	126	126											
	V2 ~ KIAS	134	134	134	133	133	133	132											
	TO FL ~ FT	6027	6254	6508	6793	7084	7382	7703											
25,000 lb 11,340 kg	V1 ~ KIAS	113	113	114	114	115	115	116	117										
	VR ~ KIAS	122	122	122	122	122	122	122	123										
	V2 ~ KIAS	132	131	131	131	130	130	130	129										
	TO FL ~ FT	5580	5783	6013	6258	6504	6783	7086	7450										
24,000 lb 10,886 kg	V1 ~ KIAS	110	110	110	111	111	112	112	113	114	114								
	VR ~ KIAS	119	119	119	119	119	119	119	120	120	120								
	V2 ~ KIAS	129	129	128	128	128	127	127	127	127	126								
	TO FL ~ FT	5166	5353	5561	5781	6007	6244	6510	6841	7209	7631								
23,000 lb 10,433 kg	V1 ~ KIAS	108	107	107	107	108	108	109	109	110	111	111							
	VR ~ KIAS	116	116	116	116	116	116	116	116	116	117	117							
	V2 ~ KIAS	126	126	126	125	125	125	124	124	124	123	123							
	TO FL ~ FT	4967	4999	5116	5317	5518	5731	5961	6247	6603	6960	7379							
22,000 lb 9979 kg	V1 ~ KIAS	108	107	106	105	105	105	106	106	107	108	108	109						
	VR ~ KIAS	113	113	114	114	114	114	114	114	114	114	114	114						
	V2 ~ KIAS	125	124	124	123	123	123	122	122	121	121	120	120						
	TO FL ~ FT	4874	4904	4936	4970	5125	5319	5528	5787	6074	6419	6837	7255						
21,000 lb 9525 kg	V1 ~ KIAS	108	107	106	105	104	102	103	103	104	105	105	106	107					
	VR ~ KIAS	111	111	111	111	111	111	111	111	112	112	112	112	112					
	V2 ~ KIAS	122	122	122	121	121	120	120	120	119	119	118	118	117					
	TO FL ~ FT	4784	4810	4840	4871	4895	4920	5106	5341	5596	5896	6232	6647	7142					
20,000 lb 9072 kg	V1 ~ KIAS	108	107	106	105	103	102	101	100	101	101	102	103	104	105				
	VR ~ KIAS	108	108	108	108	108	108	108	109	109	109	109	109	109	109				
	V2 ~ KIAS	120	120	119	119	119	118	118	118	117	117	116	116	115	115				
	TO FL ~ FT	4694	4718	4744	4772	4793	4815	4847	4897	5128	5396	5691	6043	6491	6977				
19,000 lb 8618 kg	V1 ~ KIAS	108	107	106	104	103	102	101	100	98	98	99	99	100	101				
	VR ~ KIAS	108	107	106	105	105	106	106	106	106	106	106	106	106	107				
	V2 ~ KIAS	120	119	118	117	116	116	116	115	115	115	114	114	113	112				
	TO FL ~ FT	4608	4629	4652	4677	4695	4714	4743	4780	4813	4922	5190	5496	5875	6312				
18,000 lb 8165 kg	V1 ~ KIAS	108	107	105	104	103	102	101	100	98	97	95	96	97	98				
	VR ~ KIAS	108	107	105	104	103	103	103	103	103	103	104	104	104	104				
	V2 ~ KIAS	121	119	118	116	115	114	114	113	113	112	112	111	111	110				
	TO FL ~ FT	4526	4545	4565	4586	4601	4616	4642	4674	4702	4724	4732	4996	5325	5697				
17,000 lb 7711 kg	V1 ~ KIAS	107	106	105	104	103	102	101	100	98	97	95	93	93	94				
	VR ~ KIAS	107	106	105	104	103	102	101	100	101	101	101	101	101	101				
	V2 ~ KIAS	121	120	118	116	115	113	112	111	111	110	110	109	108	107				
	TO FL ~ FT	4449	4465	4482	4500	4511	4524	4546	4573	4596	4612	4602	4584	4822	5140				

Figure 5.20.30

Flaps 15° Field Pressure Altitude (12,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS	125	125																
	VR ~ KIAS	131	131																
	V2 ~ KIAS	138	138																
	TOFL ~ FT	7656	7965																
27,000 lb 12,247 kg	V1 ~ KIAS	121	122	122	122														
	VR ~ KIAS	128	128	129	129														
	V2 ~ KIAS	136	136	136	135														
	TOFL ~ FT	7091	7377	7691	8031														
26,000 lb 11,793 kg	V1 ~ KIAS	117	118	119	119	119													
	VR ~ KIAS	125	125	126	126	126													
	V2 ~ KIAS	134	133	133	133	133													
	TOFL ~ FT	6557	6824	7113	7427	7736													
25,000 lb 11,340 kg	V1 ~ KIAS	114	114	115	115	116	116	117											
	VR ~ KIAS	122	122	122	122	122	123	123											
	V2 ~ KIAS	131	131	130	130	130	130	129											
	TOFL ~ FT	6060	6286	6535	6827	7117	7416	7730											
24,000 lb 10,886 kg	V1 ~ KIAS	110	111	111	112	112	113	113	114										
	VR ~ KIAS	119	119	119	119	119	119	119	120										
	V2 ~ KIAS	129	128	128	128	127	127	127	126										
	TOFL ~ FT	5608	5811	6036	6285	6535	6815	7105	7495										
23,000 lb 10,433 kg	V1 ~ KIAS	107	107	108	108	109	109	109	110	111	111								
	VR ~ KIAS	116	116	116	116	116	116	116	116	117	117								
	V2 ~ KIAS	126	126	125	125	125	124	124	124	123	123								
	TOFL ~ FT	5160	5345	5549	5771	5994	6231	6485	6820	7197	7609								
22,000 lb 9979 kg	V1 ~ KIAS	106	105	105	105	106	106	107	107	108	108	109							
	VR ~ KIAS	114	114	114	114	114	114	114	114	114	114	114							
	V2 ~ KIAS	124	124	123	123	122	122	122	121	121	120	120							
	TOFL ~ FT	5019	5050	5154	5358	5560	5774	6000	6294	6634	7036	7439							
21,000 lb 9525 kg	V1 ~ KIAS	106	105	104	103	103	103	103	104	105	105	106	107						
	VR ~ KIAS	111	111	111	111	111	111	111	112	112	112	112	112						
	V2 ~ KIAS	122	121	121	121	120	120	120	119	119	118	118	117						
	TOFL ~ FT	4921	4949	4977	5009	5138	5332	5536	5799	6092	6429	6816	7270						
20,000 lb 9072 kg	V1 ~ KIAS	106	105	104	103	102	100	100	101	101	102	103	104	104					
	VR ~ KIAS	108	108	108	108	108	109	109	109	109	109	109	109	109					
	V2 ~ KIAS	120	119	119	119	118	118	118	117	117	116	116	115	115					
	TOFL ~ FT	4824	4850	4875	4903	4934	4967	5077	5315	5574	5867	6197	6607	7079					
19,000 lb 8618 kg	V1 ~ KIAS	106	105	104	102	101	100	99	98	98	99	99	100	101					
	VR ~ KIAS	106	105	105	106	106	106	106	106	106	106	106	106	107					
	V2 ~ KIAS	118	117	117	116	116	116	115	115	115	114	114	113	113					
	TOFL ~ FT	4731	4754	4775	4800	4828	4858	4890	4943	5091	5351	5640	5983	6405					
18,000 lb 8165 kg	V1 ~ KIAS	106	105	104	102	101	100	99	98	97	95	96	97	98	98				
	VR ~ KIAS	106	105	104	103	103	103	103	103	104	104	104	104	104	104				
	V2 ~ KIAS	118	117	115	114	114	113	113	113	112	112	111	111	110	110				
	TOFL ~ FT	4642	4662	4681	4702	4727	4753	4781	4828	4872	4876	5134	5434	5786	6196				
17,000 lb 7711 kg	V1 ~ KIAS	106	105	103	102	101	100	99	98	97	95	93	93	94	95				
	VR ~ KIAS	106	105	103	102	101	100	100	101	101	101	101	101	101	101				
	V2 ~ KIAS	118	117	115	114	113	111	111	110	110	110	109	108	108	107				
	TOFL ~ FT	4558	4575	4591	4609	4630	4653	4677	4719	4756	4756	4740	4919	5225	5565				

Figure 5.20.31

Flaps 15° Field Pressure Altitude (13,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS																		
	VR ~ KIAS																		
	V2 ~ KIAS																		
	TO FL ~ FT																		
27,000 lb 12,247 kg	V1 ~ KIAS																		
	VR ~ KIAS																		
	V2 ~ KIAS																		
	TO FL ~ FT																		
26,000 lb 11,793 kg	V1 ~ KIAS	118	119	119															
	VR ~ KIAS	126	126	126															
	V2 ~ KIAS	133	133	133															
	TO FL ~ FT	7234	7522	7841															
25,000 lb 11,340 kg	V1 ~ KIAS	115	115	116	116	117													
	VR ~ KIAS	122	122	122	122	123													
	V2 ~ KIAS	131	130	130	130	129													
	TO FL ~ FT	6650	6917	7213	7534	7843													
24,000 lb 10,886 kg	V1 ~ KIAS	111	111	112	112	113	113												
	VR ~ KIAS	119	119	119	119	119	120												
	V2 ~ KIAS	128	128	127	127	127	127												
	TO FL ~ FT	6142	6371	6626	6921	7210	7512												
23,000 lb 10,433 kg	V1 ~ KIAS	108	108	108	109	109	110	110	111										
	VR ~ KIAS	116	116	116	116	116	116	116	117										
	V2 ~ KIAS	125	125	125	124	124	124	123	123										
	TO FL ~ FT	5649	5851	6080	6333	6577	6855	7153	7517										
22,000 lb 9979 kg	V1 ~ KIAS	105	105	106	106	106	107	107	108	108	109								
	VR ~ KIAS	114	114	114	114	114	114	114	114	114	114								
	V2 ~ KIAS	123	123	123	122	122	121	121	121	120	120								
	TO FL ~ FT	5247	5435	5643	5872	6096	6332	6588	6929	7333	7737								
21,000 lb 9525 kg	V1 ~ KIAS	104	103	102	103	103	104	104	105	105	106	107							
	VR ~ KIAS	111	111	111	111	111	111	112	112	112	112	112							
	V2 ~ KIAS	121	121	120	120	120	119	119	119	118	118	117							
	TO FL ~ FT	5103	5134	5215	5424	5626	5839	6072	6360	6699	7092	7522							
20,000 lb 9072 kg	V1 ~ KIAS	104	103	102	101	100	100	101	101	102	103	103	104						
	VR ~ KIAS	108	108	108	108	109	109	109	109	109	109	109	109						
	V2 ~ KIAS	119	119	118	118	118	117	117	117	116	116	116	115						
	TO FL ~ FT	4998	5025	5059	5102	5161	5354	5563	5820	6109	6446	6837	7280						
19,000 lb 8618 kg	V1 ~ KIAS	104	103	102	101	100	99	97	98	99	99	100	101	102					
	VR ~ KIAS	106	106	106	106	106	106	106	106	106	106	106	107	107					
	V2 ~ KIAS	117	116	116	116	115	115	115	114	114	114	113	113	112					
	TO FL ~ FT	4897	4921	4952	4990	5023	5055	5084	5314	5570	5866	6192	6588	7055					
18,000 lb 8165 kg	V1 ~ KIAS	104	103	102	101	100	98	97	96	95	96	97	97	98					
	VR ~ KIAS	104	103	103	103	103	103	103	103	104	104	104	104	104					
	V2 ~ KIAS	116	114	114	114	113	113	112	112	112	111	111	110	110					
	TO FL ~ FT	4800	4821	4849	4883	4913	4941	4964	5001	5074	5341	5626	5954	6353					
17,000 lb 7711 kg	V1 ~ KIAS	104	103	102	100	99	98	97	96	95	93	93	94	95					
	VR ~ KIAS	104	103	102	101	100	101	101	101	101	101	101	101	101					
	V2 ~ KIAS	116	114	113	112	111	111	110	110	109	109	108	108	107					
	TO FL ~ FT	4708	4727	4750	4780	4807	4831	4850	4881	4914	4928	5094	5386	5718					

Figure 5.20.32

Flaps 15° Field Pressure Altitude (14,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V1 ~ KIAS																		
	VR ~ KIAS																		
	V2 ~ KIAS																		
	TO FL ~ FT																		
27,000 lb 12,247 kg	V1 ~ KIAS																		
	VR ~ KIAS																		
	V2 ~ KIAS																		
	TO FL ~ FT																		
26,000 lb 11,793 kg	V1 ~ KIAS																		
	VR ~ KIAS																		
	V2 ~ KIAS																		
	TO FL ~ FT																		
25,000 lb 11,340 kg	V1 ~ KIAS	116	116	116															
	VR ~ KIAS	122	122	123															
	V2 ~ KIAS	130	130	130															
	TO FL ~ FT	7343	7636	7962															
24,000 lb 10,886 kg	V1 ~ KIAS	112	112	113	113	114													
	VR ~ KIAS	119	119	120	120	120													
	V2 ~ KIAS	128	127	127	127	126													
	TO FL ~ FT	6747	7013	7320	7641	7951													
23,000 lb 10,433 kg	V1 ~ KIAS	108	109	109	110	110	110	111											
	VR ~ KIAS	116	116	116	116	116	116	116											
	V2 ~ KIAS	125	124	124	124	123	123	123											
	TO FL ~ FT	6194	6423	6682	6969	7260	7561	8066											
22,000 lb 9979 kg	V1 ~ KIAS	105	106	106	107	107	107	108	109										
	VR ~ KIAS	114	114	114	114	114	114	114	114										
	V2 ~ KIAS	123	122	122	122	121	121	121	120										
	TO FL ~ FT	5750	5957	6192	6447	6692	6966	7283	7660										
21,000 lb 9525 kg	V1 ~ KIAS	102	103	103	104	104	104	105	106	106	107								
	VR ~ KIAS	111	111	111	111	112	112	112	112	112	112								
	V2 ~ KIAS	120	120	120	119	119	119	119	118	118	117								
	TO FL ~ FT	5314	5504	5717	5945	6169	6407	6673	7025	7405	7835								
20,000 lb 9072 kg	V1 ~ KIAS	102	101	100	100	101	101	102	102	103	103	104							
	VR ~ KIAS	109	109	109	109	109	109	109	109	109	109	109							
	V2 ~ KIAS	118	118	118	117	117	117	117	116	116	116	115							
	TO FL ~ FT	5196	5230	5272	5453	5653	5867	6104	6397	6729	7121	7513							
19,000 lb 8618 kg	V1 ~ KIAS	102	101	100	99	98	98	98	99	99	100	101	101	102					
	VR ~ KIAS	106	106	106	106	106	106	106	106	106	107	107	107	107					
	V2 ~ KIAS	116	116	115	115	115	115	114	114	114	113	113	112	112					
	TO FL ~ FT	5086	5117	5154	5196	5224	5361	5572	5832	6123	6449	6829	7279	7729					
18,000 lb 8165 kg	V1 ~ KIAS	102	101	100	99	98	97	96	95	96	97	97	98	99					
	VR ~ KIAS	103	103	103	103	103	103	103	104	104	104	104	104	104					
	V2 ~ KIAS	114	114	113	113	113	112	112	112	111	111	110	110	109					
	TO FL ~ FT	4980	5007	5042	5080	5103	5131	5170	5317	5574	5858	6176	6540	6978					
17,000 lb 7711 kg	V1 ~ KIAS	102	101	100	99	98	97	96	95	93	93	94	94	95					
	VR ~ KIAS	102	101	101	101	101	101	101	101	101	101	101	101	101					
	V2 ~ KIAS	113	112	111	111	110	110	110	109	109	108	108	107	106					
	TO FL ~ FT	4879	4904	4934	4968	4988	5012	5046	5102	5131	5306	5587	5898	6259					

Figure 5.20.33

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TAKE-OFF FIELD LENGTH CORRECTION
FLAPS 15º

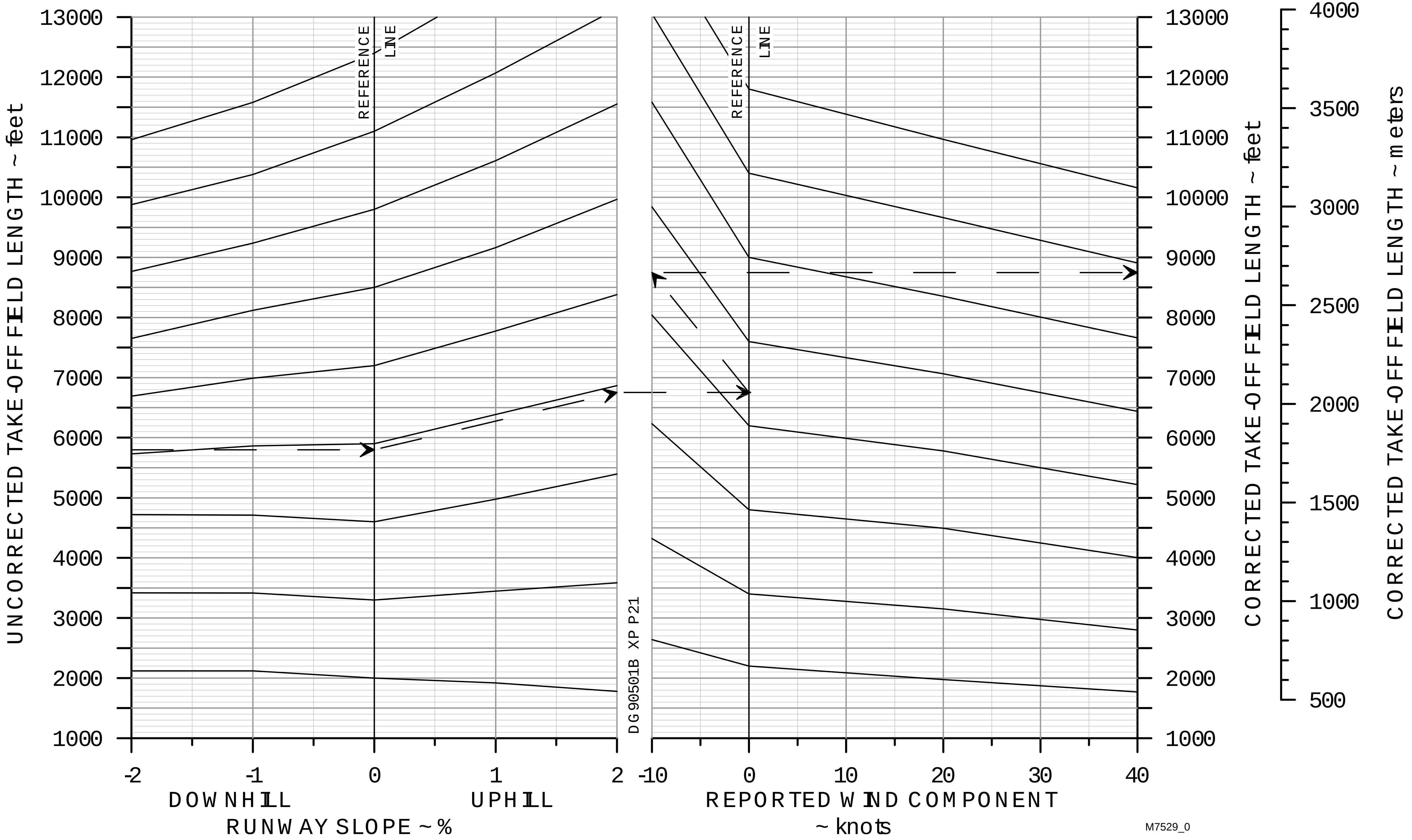

Figure 5.20.34

TAKE-OFF DECISION SPEED (V_1) CORRECTION
FLAPS 15º

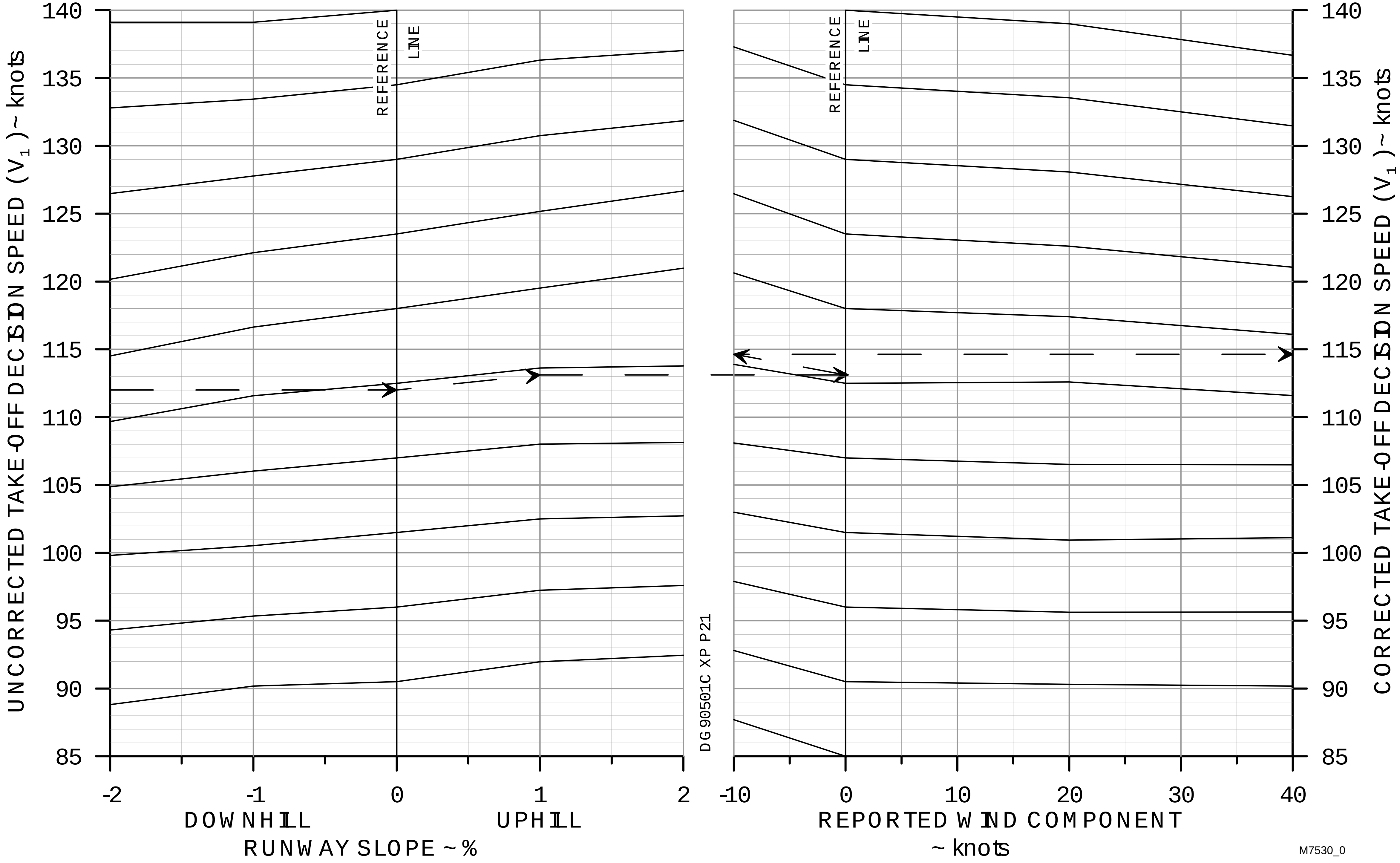

Figure 5.20.35

SUB-SECTION 5.25

NET TAKE-OFF FLIGHTPATH - APR ON

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INTRODUCTION

The charts in this Sub-section are provided to enable a complete net take-off flight path to be constructed, should it be necessary to establish that any obstacles along the intended line of flight will be cleared by the safety margin required by the relevant operating regulations. Once it has been established beyond all doubt that the obstacles will be cleared, there is no need to proceed further with the calculation.

For close in obstacles Figures 5.25.2 and 5.25.4 provide basic "straight climb out" second segment data for take-off flap settings of 15° and 0°. Figures 5.25.3, 5.25.5 and 5.25.6 enable the full take-off net flight path to be constructed.

The radius of steady turn which is to be used for a change of heading greater than 15° is shown on Figure 5.25.7.

When take-off is to be made in a headwind greater than 40 knots, performance appropriate to not more than 40 knots is to be read on the charts.

DEFINITIONS

Reference Zero

This is the zero to which the co-ordinates of the various points on the flight path are referred. It is defined by a vertical datum which passes through the 35 feet height point at the end of the take-off distance required, and a horizontal datum 35 feet below this point.

$3^1/2$ Minute Point

The point at which three and a half minutes have elapsed since start of take-off. At this point a level acceleration to final take-off climb speed commences.

This point has been selected in order that acceleration can be completed within the five minute take-off power limitations.

Five Minute Point

The point at which five minutes have elapsed since start of take-off. At this point APR must be cancelled and power reduced to maximum continuous.

First Segment

This extends from the end of the take-off distance required to the point at which the landing gear is fully retracted. Since it takes place in ground effect the climb gradient always exceeds the second segment free air gradient. For simplicity of presentation it is assumed that first segment gradient is equal to that of the second segment and that the second segment starts at 35 feet and the retraction complete point is not shown.

Second Segment

This extends from 35 feet (see above) to a height of 1500 feet or until the three and a half minute point is reached, whichever occurs first.

Third Segment

During this segment the airplane accelerates in level flight from V_2 to final take-off climb speed on maximum thrust. The height may be 1500 feet or some lower height. If take-off was with flaps 15°, flaps are selected up at V_2 + 10 knots.

Fourth Segment

During this segment the airplane completes the climb to 1500 feet in those cases where acceleration took place at a lower height.

Fifth Segment

The airplane is accelerated from V_{FTO} to V_{ERC} during this segment.

PRESENTATION

The net take-off flight path consists of up to five segments, the information being presented on two charts for each flap setting to the end of the fourth segment, plus a further chart independent of flap setting which enables the fifth segment to be calculated.

Because the first segment climb gradient will always be better than the second segment gradient, the first segment performance of the flight path is not given but the second segment is assumed to commence at 35 feet and the landing gear retraction complete point is ignored.

The construction is based on the assumption that the airplane is flown in the following manner:

- Engine failure occurs at V_1, and APR thrust is automatically applied.
- Landing gear is selected up immediately after lift-off. At the end of the take-off distance - where the net flight path begins - the landing gear is still retracting. The speed is V_2 appropriate to the flap setting.
- The climb is continued at V_2 and take-off thrust until $3^1/_2$ minutes have elapsed from the start of take-off or until the airplane reaches 1500 feet, whichever occurs first.
- From this point the airplane is accelerated in level flight to the final take-off climb speed, V_{FTO} (Figure 5.10.1). If take-off was with flaps 15° then they are selected up during the acceleration at V_2 + 10 knots or at V_{FTO} whichever is lower.
- When the flaps have been retracted and the final take-off climb speed achieved, the climb is continued if necessary to 1500 feet.
- APR is cancelled and thrust reduced to maximum continuous at the five minute point. Finally the airplane is accelerated to the en-route climb speed.

ILLUSTRATED EXAMPLES

Figure 5.25.1 shows two examples of the use of the flight path charts. A further example where only the second segment needs to be considered is also provided.

Example 1

Flaps	*0°*
Weight	*25,300 lb*
Air Temperature	*15° C*
Field Pressure Altitude	*6500 feet*
Reported Wind Component	*15 knots tailwind*
Engine Antice	*Off*

From Figure 5.25.5 the height above Reference Zero at the three and a half minute point is 1100 feet. Also from this Figure the Horizontal Distance from Reference Zero:

- To the three and a half minute point is 51,500 feet.
- To achievement of final take-off climb speed is 71,000 feet.
- To reach 1500 feet is 86,500 feet.

The flight path to 1500 feet is shown on Figure 5.25.1. It may be extended to the point at which en-route climb speed is achieved as follows:

- With the lapse rate resulting in a 3° C lower temperature, the fourth segment (Final Take-0ff Climb) net gradient from Figure 5.55.3 is 2.4% at 1500 feet above the airfield.
- Figure 5.25.6 then gives a fifth segment acceleration distance of 16,000 feet.

Therefore, the total distance to the point at which en-route climb speed is achieved is 86,500 +16,000 = 102,500 feet from Reference Zero.

Example 2

Flaps	*0°*
Weight	*20,600 lb*
Air Temperature	*19° C*
Field Pressure Altitude	*8000 feet*
Reported wind component	*10 knots headwind*
Engine Antice	*Off*

Using Figure 5.25.5, this example comes in the area where acceleration takes place at 1500 feet and the Horizontal Distance from Reference Zero:

- To 1500 feet is 36,500 feet.
- To achieve final take-off climb speed is 46,000 feet.

The flight path to the point at which final take-off climb speed is achieved is shown on Figure 5.25.1. It may be extended to the point at which en-route climb speed is achieved, using the same method as in Example 1, the fourth segment net gradient is 3.35% (at 9500 feet, 16° C) and the fifth segment acceleration distance is 10,400 feet.

Therefore, the total distance to the en-route climb speed is 46,000 + 10,400 = 56,400 feet.

Example 3

In a case where only the second segment needs to be considered, and particularly where the obstacles are close in, it may be more convenient to obtain points on the flight path by using the second segment net gradient charts, Figures 5.25.2 and 5.25.4.

Flaps	*0°*
Weight	*20,600 lb*
Air Temperature	*19° C*
Field Pressure Altitude	*8000 feet*
Reported Wind Component	*16 knots headwind*
Engine Antice	*Off*

Find the height of the flight path at 1000 feet from Reference Zero. The second segment gradient is found from Figure 5.25.4 to be 4.5%.

Then the height gained in the second segment

$$= \frac{4.5}{100} \times 1{,}000 = 45 \text{ feet}$$

and the height above Reference Zero

= 45 + 35 = 80 feet

NOTE: If the height gained during the second segment climb is significant, then the gradient must be read at the mean altitude during the climb allowing a temperature reduction of 2° C for every 1000 feet altitude above the airfield.

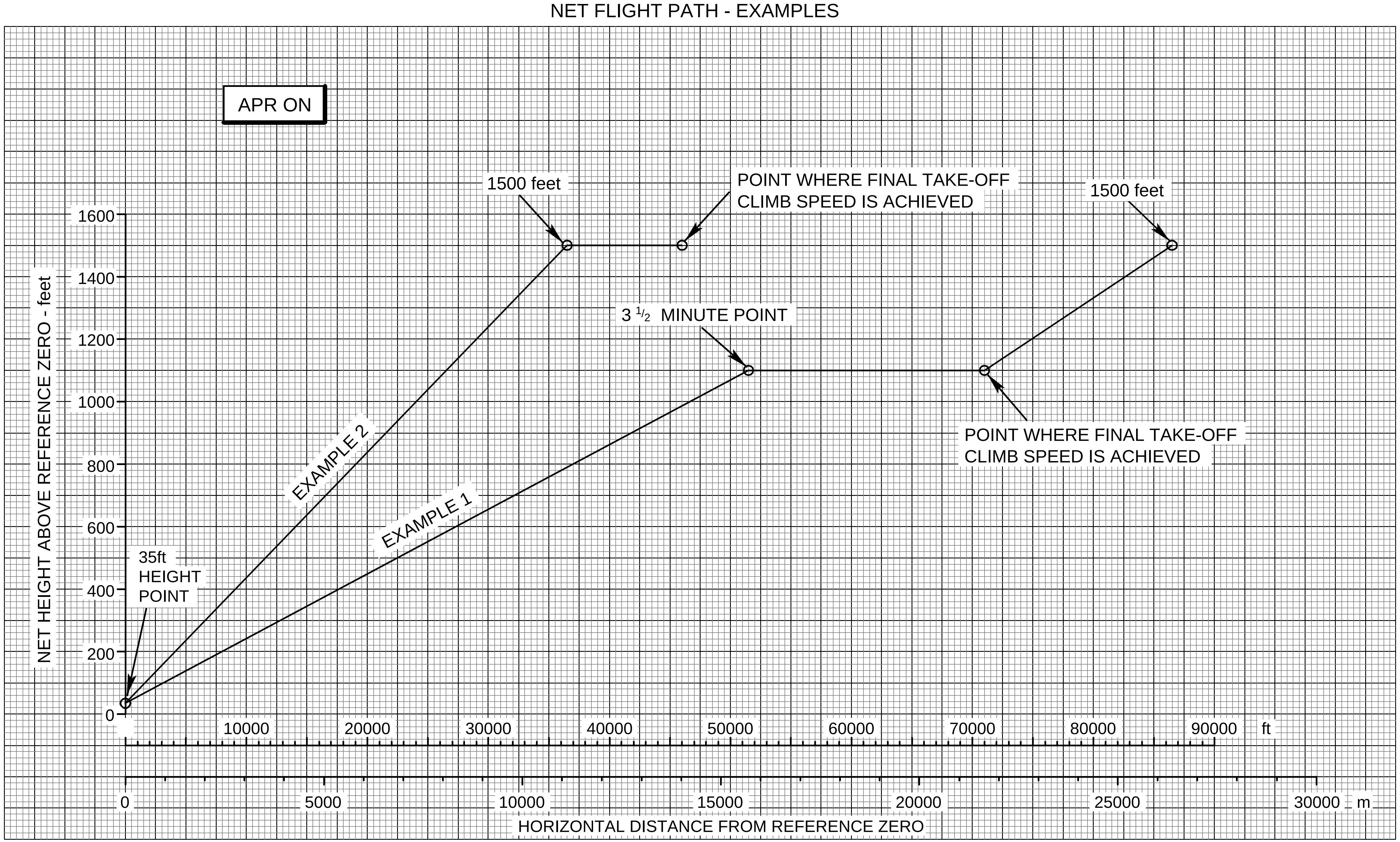

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Figure 5.25.1

NET TAKE-OFF FLIGHT PATH
SECOND SEGMENT NET GRADIENT - FLAPS 15°

Figure 5.25.2 shows the second segment net gradient of climb.

Associated Conditions

Engines	*One engine operating at maximum thrust with APR ON.*
Engine Bleed air	*All air bleeds off; see NOTE 1 for the effect of engine antice bleed.*
Flaps	*15°*
Landing Gear	*Up*
Airspeed	*Take-off safety speed V_2 (refer to TABULATED TAKEOFF DATA Sub-section 5.20)*

NOTES:

1. *To take account of engine antice bleed, add 10° C to the actual air temperature before entering the chart.*
2. *The wind grid is factored in such a way that an effect of not more than 50% of headwinds and not less than 150% of tailwinds is obtained. Reported winds may therefore be used directly in the grid.*

Instructions for Use of Chart

The use of the chart is illustrated by the arrowed broken lines:

- Enter the chart with the air temperature and move up to the appropriate mean altitude.
- Proceed horizontally to the weight grid reference line and then follow the guidelines to the appropriate weight.
- Finally proceed to the wind reference line and through the wind correction grid to read net gradient.

TEMPORARY CHANGE

P/N 140-590032-0005TC23

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005.
AIRPLANE EFFECTIVITY:	All Hawker 800XP Pro Line 21 airplanes.
DESCRIPTION OF CHANGE:	To provide a correction factor for turning climbs.
FILING INSTRUCTIONS:	Insert Temporary Change 23 into the Airplane Flight Manual **Section 5 - PERFORMANCE** as follows: **Sub-section 5.25: NET TAKE-OFF FLIGHT PATH - APR ON** • Page 1 of 12 to face AFM Page 8. • Page 3 of 12 to face AFM Page 12. **Sub-section 5.40: EN-ROUTE DATA** • Page 5 of 12 to face AFM Page 2. **Sub-section 5.55: GROSS PERFORMANCE** • Page 7 of 12 to face AFM Page 4. • Page 9 of 12 to face AFM Page 8. • Page 11 of 12 to face AFM Page 12.

SECTION 5 - PERFORMANCE

Sub-section 5.25 - NET TAKE-OFF FLIGHT PATH - APR ON

NET TAKE-OFF FLIGHT PATH
SECOND SEGMENT NET GRADIENT - FLAPS 15°

Under* Associated Conditions*, read the following after NOTE 2:

3. *For a turning climb, up to and including a 15° bank angle, decrease net climb gradient by 1.0 percentage point.*

Instructions for Use of Chart

The use of the chart is illustrated by the broken arrowed lines:

- Enter the chart with the air temperature and move up to the appropriate mean altitude.
- Proceed horizontally to the weight grid reference line and then follow the guidelines to the appropriate weight.
- Proceed to the wind reference line and through the wind correction grid to read net gradient.
- Finally correct for bank angle, if required, by applying the associated bank angle correction (e.g. Charted Net Gradient - Correction = 2.6% - 1.0% = 1.6%).

TEMPORARY CHANGE

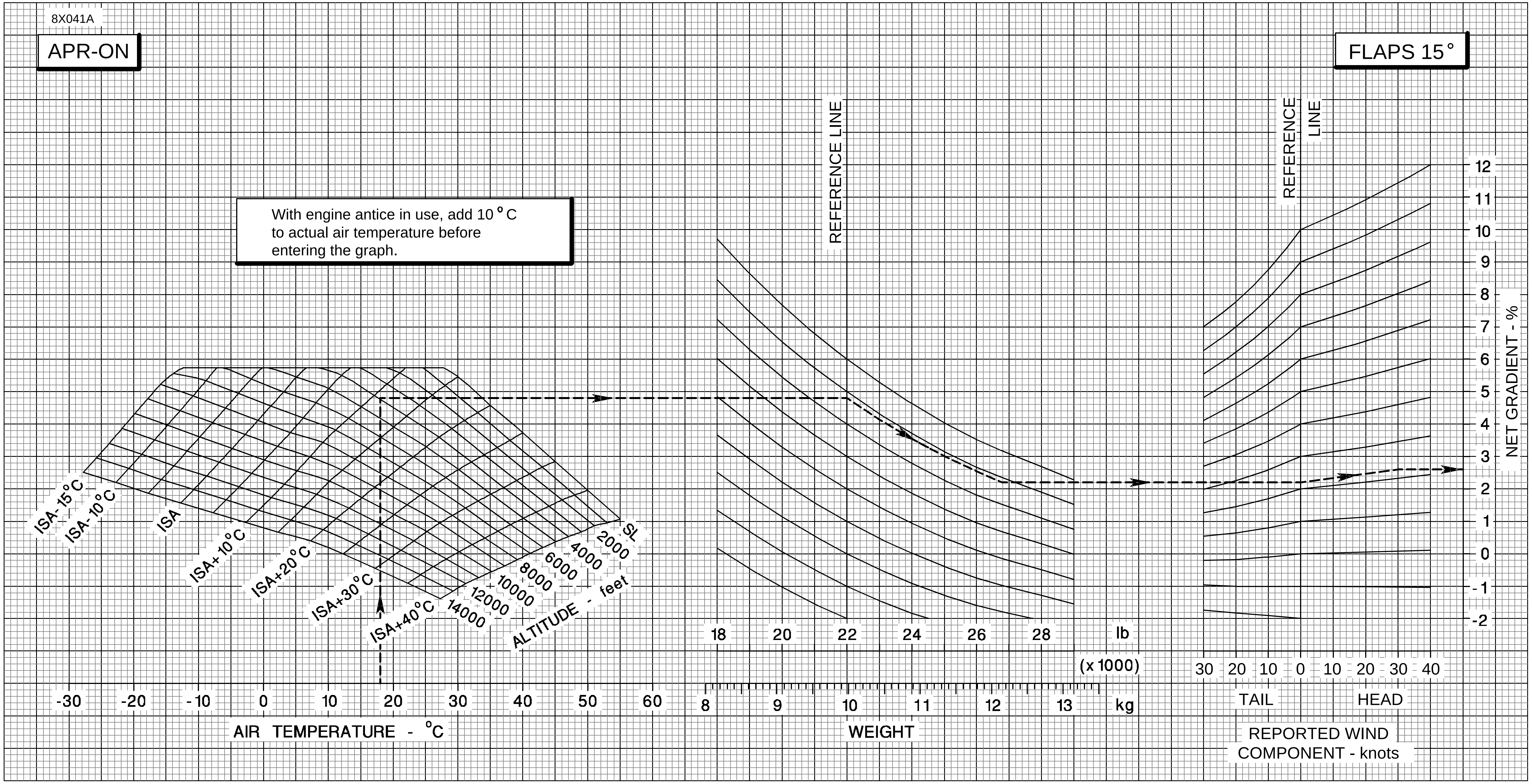
P/N 140-590032-0005TC23

Approved By: Grant Youngdahl ....

for Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 6-2-09 ....

NET TAKE-OFF FLIGHT PATH SECOND SEGMENT NET GRADIENT


With engine antice in use, add 10 °C to actual air temperature before entering the graph.

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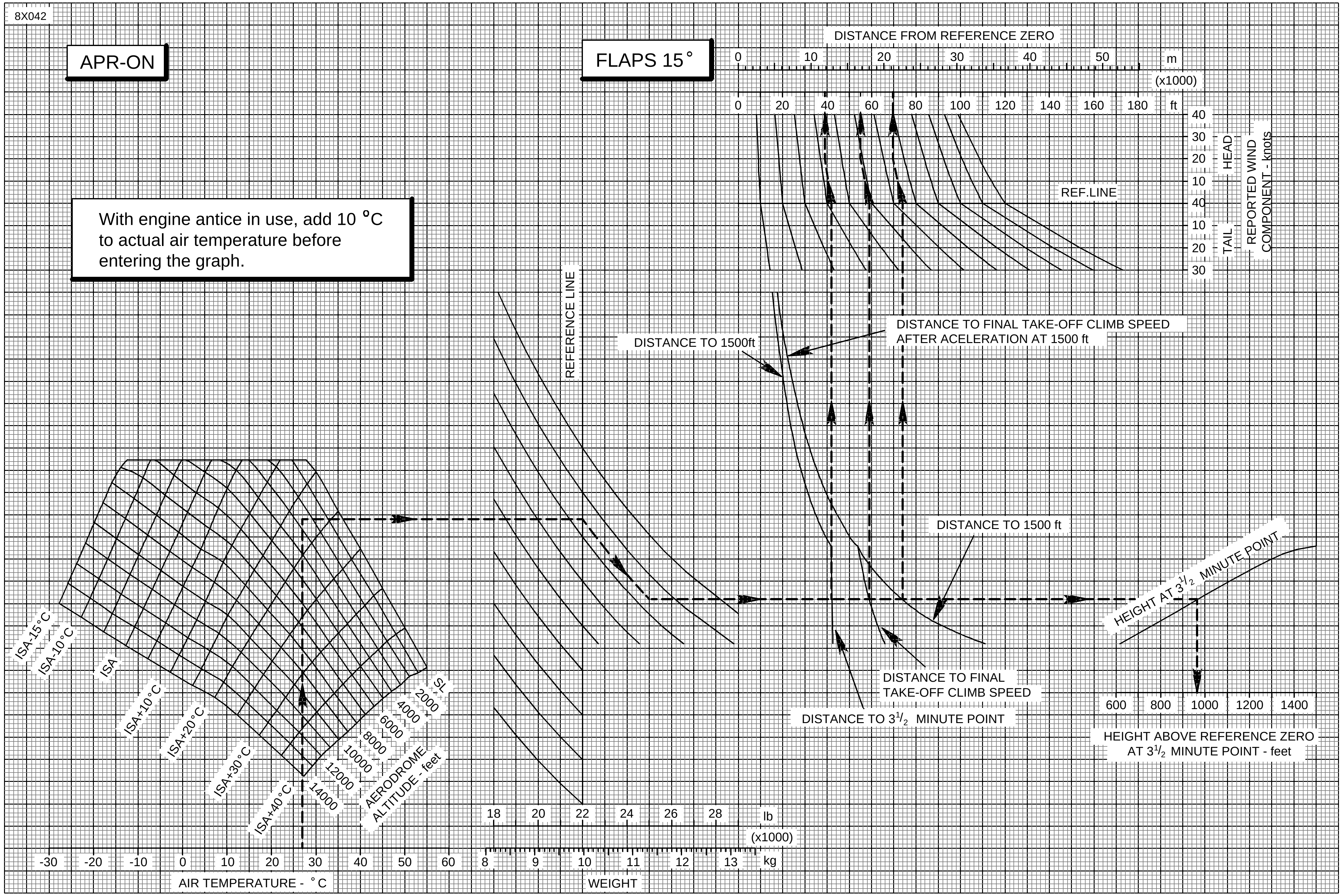
NET TAKE-OFF FLIGHT PATH - SECOND, THIRD AND FOURTH SEGMENTS



With engine antice in use, add 10 °C to actual air temperature before entering the graph.

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NET TAKE-OFF FLIGHT PATH
SECOND, THIRD AND FOURTH SEGMENTS - FLAPS 15°

Figure 5.25.3 shows the distance from reference zero to the end of the second, third, and where appropriate fourth, segments of the flight path.

Associated Conditions

Engines	*Second and third segments: one engine operating at maximum thrust with APR ON.* *Fourth segment: one engine operating at maximum continuous thrust.*
Engine Bleed Air	*All air bleeds off; see NOTE 1 for the effect of engine antice bleed.*
Flaps	*15°; retracted at* V_2 *+ 10 knots.*
Landing Gear	*Up*
Airspeed	*Takeoff safety speed* V_2 *(refer to TABULATED TAKEOFF DATA Sub-section 5.20) Increasing to* V_{FTO} *(refer to Figure 5.10.1) at end of third segment.*

NOTES:

1. *To take account of engine antice bleed, add 10° C to the actual air temperature before entering the chart.*

2. *The wind grid is factored in such a way that an effect of not more than 50% of headwinds and not less than 150% of tailwinds is obtained. Reported winds may therefore be used directly in the grid.*

Instructions for Use of Chart

The use of the chart is illustrated by the arrowed broken lines:

- Enter the chart with air temperature and move up to the appropriate field pressure altitude.
- Proceed horizontally to the weight grid reference line and then follow the curve to the appropriate weight.
- Proceed horizontally across to intersect the line on the far right and then downwards to read height at the three and a half minute point on the bottom scale.
- Proceed upwards from the intersection with the distance curves through the wind correction grid to read distances to the three and a half minute point, to the achievement of final take-off climb speed and to 1500 feet.
- In those cases where the reading on the height scale is at 1500 feet, the level acceleration (third segment) takes place at 1500 feet and there is no fourth segment.

NET TAKE-OFF FLIGHT PATH
SECOND SEGMENT NET GRADIENT - FLAPS 0°

Figure 5.25.4 shows the second segment net gradient of climb at the mean height of this segment.

Associated Conditions

Engines	*One engine operating at maximum thrust with APR ON.*
Engine Bleed Air	*All air bleeds off; see NOTE 1 for the effect of engine antice bleed.*
Flaps	*0°*
Landing Gear	*Up*
Airspeed	*Take-off safety speed* V_2 *(refer to TABULATED TAKEOFF DATA Sub-section 5.20)*

NOTES:

1. *To take account of engine antice bleed, add 10° C to the actual air temperature before entering the chart.*
2. *The wind grid is factored in such a way that an effect of not more than 50% of headwinds and not less than 150% of tailwinds is obtained. Reported winds may therefore be used directly in the grid.*

Instructions for Use of Chart

The use of the chart is illustrated by the arrowed broken lines:

- Enter the chart with the air temperature and move up to the appropriate field pressure altitude.
- Proceed across to the weight grid reference line and then follow the guide lines to the appropriate weight.
- Move horizontally to the line on the right.
- Finally proceed upwards to the wind reference line and through the wind correction grid to obtain the net gradient.

TEMPORARY CHANGE

P/N 140-590032-0005TC23

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005.
AIRPLANE EFFECTIVITY:	All Hawker 800XP Pro Line 21 airplanes.
DESCRIPTION OF CHANGE:	To provide a correction factor for turning climbs.
FILING INSTRUCTIONS:	Insert Temporary Change 23 into the Airplane Flight Manual **Section 5 - PERFORMANCE** as follows: **Sub-section 5.25: NET TAKE-OFF FLIGHT PATH - APR ON** • Page 1 of 12 to face AFM Page 8. • Page 3 of 12 to face AFM Page 12. **Sub-section 5.40: EN-ROUTE DATA** • Page 5 of 12 to face AFM Page 2. **Sub-section 5.55: GROSS PERFORMANCE** • Page 7 of 12 to face AFM Page 4. • Page 9 of 12 to face AFM Page 8. • Page 11 of 12 to face AFM Page 12.

SECTION 5 - PERFORMANCE

Sub-section 5.25 - NET TAKE-OFF FLIGHT PATH - APR ON

NET TAKE-OFF FLIGHT PATH
SECOND SEGMENT NET GRADIENT - FLAPS 0°

Under* Associated Conditions*, read the following after NOTE 2:

> 3. *For a turning climb, up to and including a 15° bank angle, decrease net climb gradient by 1.0 percentage point.*

Instructions For Use of Charts

The use of the chart is illustrated by the broken arrowed lines:

- Enter the chart with the air temperature and move up to the appropriate field pressure altitude.
- Proceed across to the weight grid reference line and then follow the guidelines to the appropriate weight.
- Move horizontally to the line on the right.
- Proceed upwards to the wind reference line and through the wind correction grid to obtain the net gradient.
- Finally correct for bank angle, if required, by applying the associated bank angle correction (e.g. Charted Net Gradient - Correction = 4.5% - 1.0% = 3.5%).

TEMPORARY CHANGE
P/N 140-590032-0005TC23

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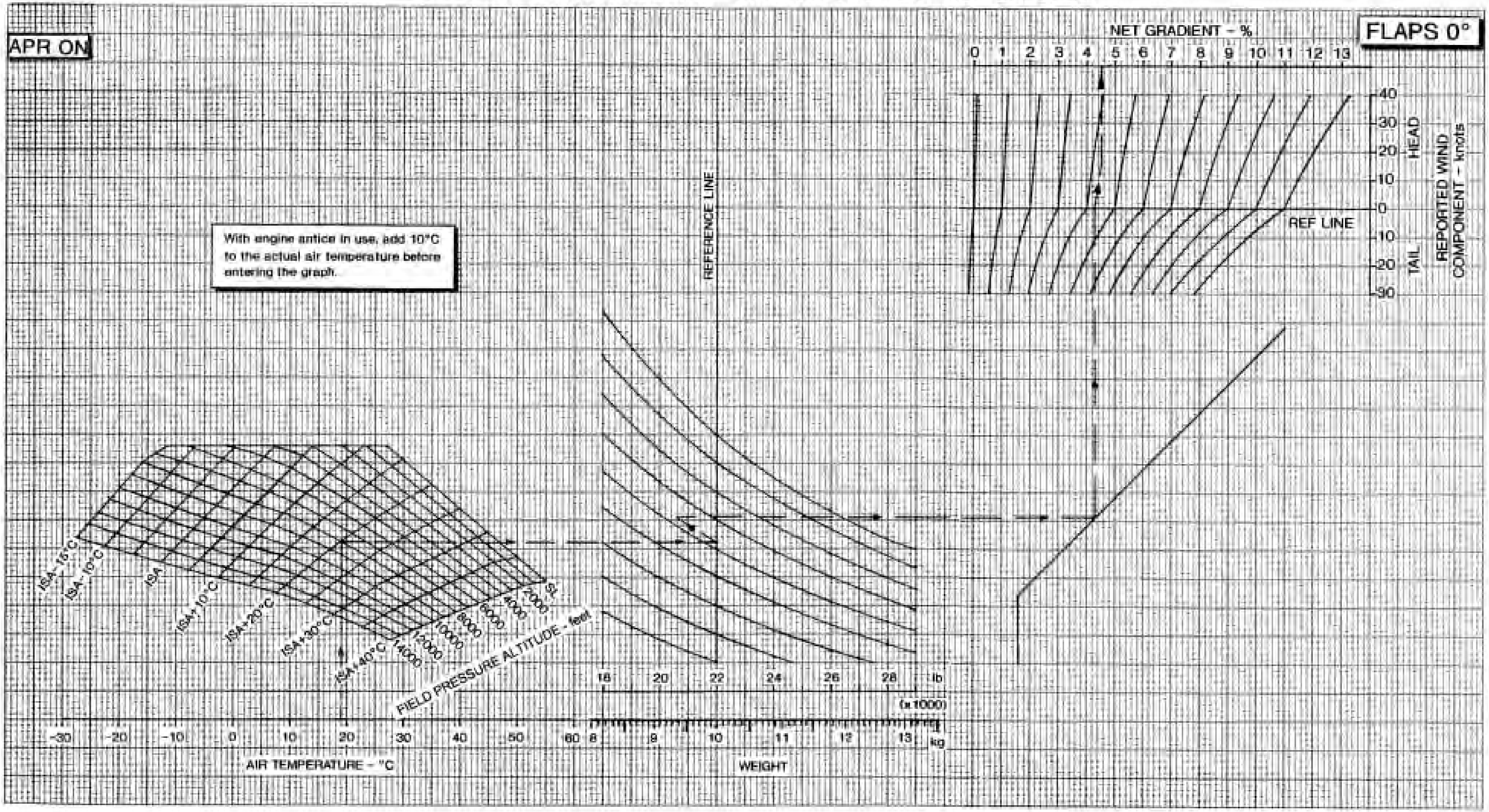
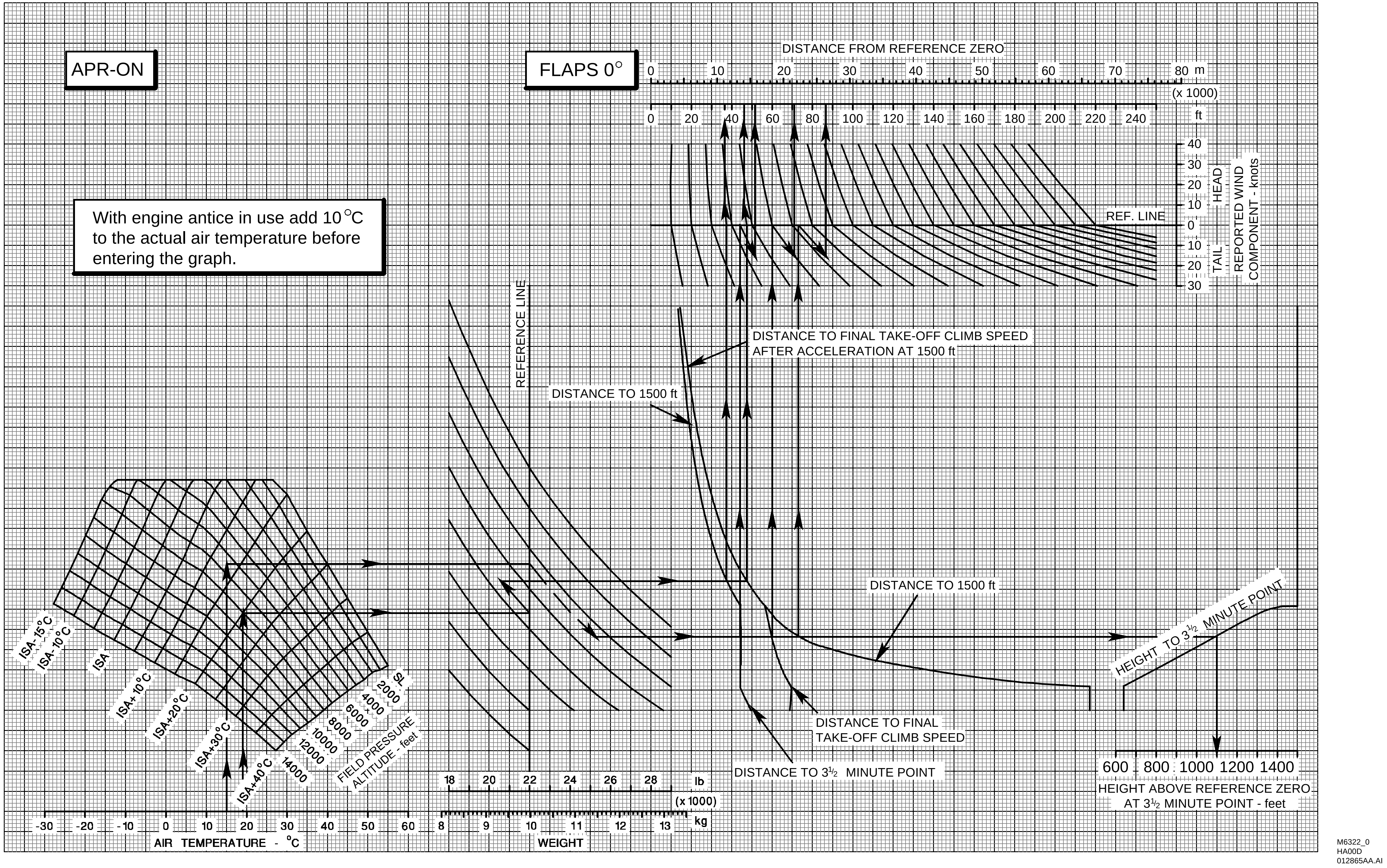
NET TAKE-OFF FLIGHT PATH SECOND SEGMENT NET GRADIENT



With engine antice in use, add 10°C to the actual air temperature before entering the graph.

NET TAKE-OFF FLIGHT PATH - SECOND, THIRD AND FOURTH SEGMENTS



With engine antice in use add 10°C to the actual air temperature before entering the graph.

NET TAKE-OFF FLIGHT PATH
SECOND, THIRD AND FOURTH SEGMENTS - FLAPS 0°

Figure 5.25.5 shows the distance from reference zero to the end of the second, third, and where appropriate fourth, segments of the flight path.

Associated Conditions

Engines	*Second and third segments: one engine operating at maximum thrust with APR ON.* *Fourth segment; one engine operating at maximum continuous thrust.*
Engine Bleed Air	*All air bleeds off; see NOTE 1 for the effect of engine antice bleed.*
Flaps	*0°*
Landing Gear	*Up*
Airspeed	*Take-off safety speed* V_2 *(refer to TABULATED TAKEOFF DATA Sub-section 5.20) increasing to* V_{FTO} *(see Figure 5.10.1) at end of third segment)*

NOTES:

1. *To take account of engine antice bleed, add 10° C to the actual air temperature before entering the chart.*

2. *The wind grid is factored in such a way that an effect of not more than 50% of headwinds and not less than 150% of tailwinds is obtained. Reported winds may therefore be used directly in the grid.*

Instructions for Use of Chart

The use of the chart is illustrated by the arrowed broken lines:

- Enter the chart with air temperature and move up to the appropriate field pressure altitude.

- Proceed horizontally to the weight grid reference line and then follow the curve to the appropriate weight.

- Proceed horizontally across to intersect the line on the far right and then downwards to read height at the three and a half minute point on the bottom scale.

- Proceed upwards from the intersection with the distance curves through the wind correction grid to read distances to the three and a half minute point, to the achievement of final take-off climb speed and to 1500 feet.

- In those cases where the reading on the height scale is at 1500 feet, the level acceleration (third segment) takes place at 1500 feet and there is no fourth segment.

NET TAKE-OFF FLIGHT PATH
FIFTH SEGMENT NET ACCELERATION DISTANCE

Figure 5.25.6 shows the fifth segment net acceleration distance.

Associated Conditions

Engines	*One engine operating at maximum continuous thrust.*
Engine Bleed Air	*Air conditioning bleed off ; Antice off or on.*
Flaps	*0°*
Landing Gear	*Up*
Airspeed	V_{FTO} *(see Figure 5.10.1) increasing to* V_{ERC} *(see Figure 5.10.2) or to minimum speed for use in icing conditions (see Pilot's Operating Manual, Section V Sub-section 2 - Figure 2, Speed for Use in Icing Conditions).*

Instructions for Use of Chart

The use of the chart is illustrated by the arrowed broken lines:

- Obtain fourth segment (Final Take-off Climb) net gradient from Figure 5.55.3 allowing for engine antice if necessary.
- Proceed vertically to the appropriate curve and then read distance from the scale at the right.

FIFTH SEGMENT NET ACCELERATION DISTANCE

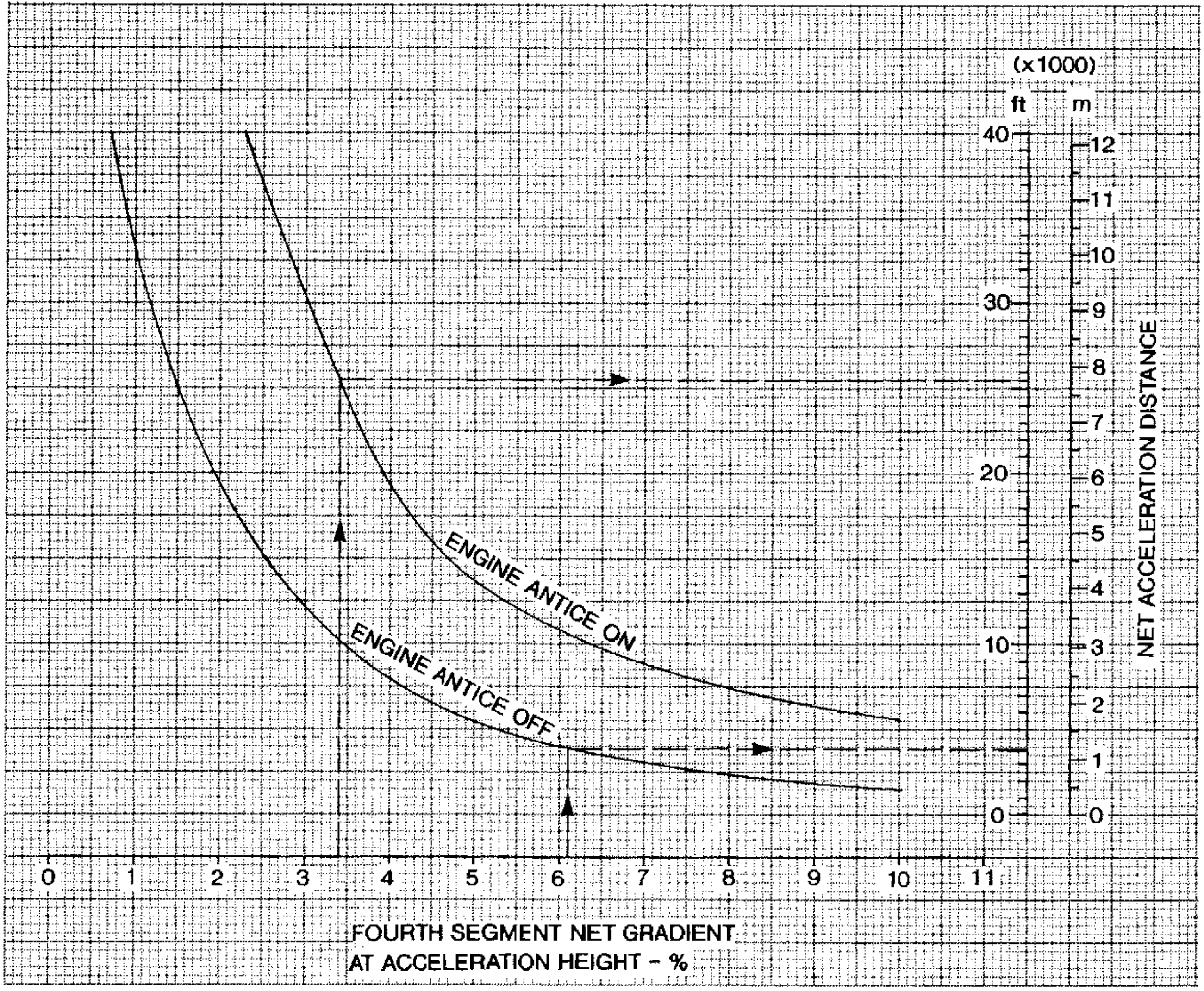


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Figure 5.25.6

NET TAKE-OFF FLIGHT PATH
RADIUS OF STEADY TURN

The minimum radius which may be assumed for a steady turn made during the flight path is shown in Figure 5.25.7 for flaps 15° and 0°, for varying climb speed, air temperature and mean altitude. The chart is based on a steady 15° banked turn at a given speed.

The total change of heading required is assessed from the airfield obstruction chart, but if it is less than 15°, no account of the effect of the turn need be taken.

Instructions for Use of Chart

Use of the chart is illustrated by the arrowed broken lines.

To determine the radius of steady turn:

- The speed appropriate to the segment and flap setting should first be established from Sub-section 5.10.
- Enter the chart with the speed and move up to the curve.
- Proceed horizontally to the temperature grid reference line.
- Follow the guidelines to the appropriate temperature, and then similarly through the altitude correction grid to obtain radius of steady turn.

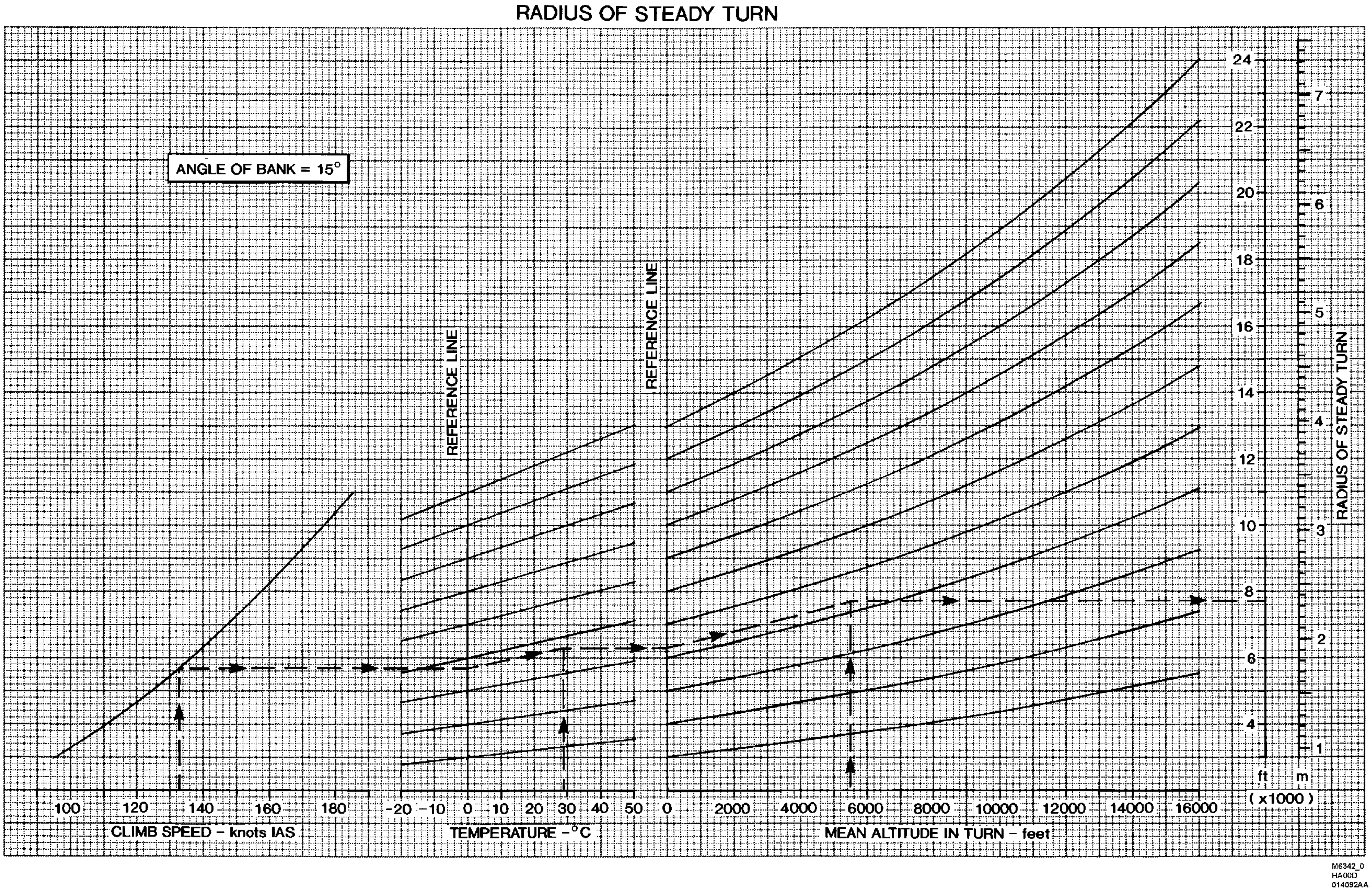

RADIUS OF STEADY TURN
ANGLE OF BANK = 15°
REFERENCE LINE
REFERENCE LINE
100
120
140
160
180
CLIMB SPEED – knots IAS
-20
-10
0
10
20
30
40
50
TEMPERATURE – °C
0
2000
4000
6000
8000
10000
12000
14000
16000
MEAN ALTITUDE IN TURN – feet
24
22
20
18
16
14
12
10
8
6
4
ft
7
6
5
4
3
2
1
m
(x1000)
RADIUS OF STEADY TURN
M6342_0
HA00D
014092AA

Figure 5.25.7

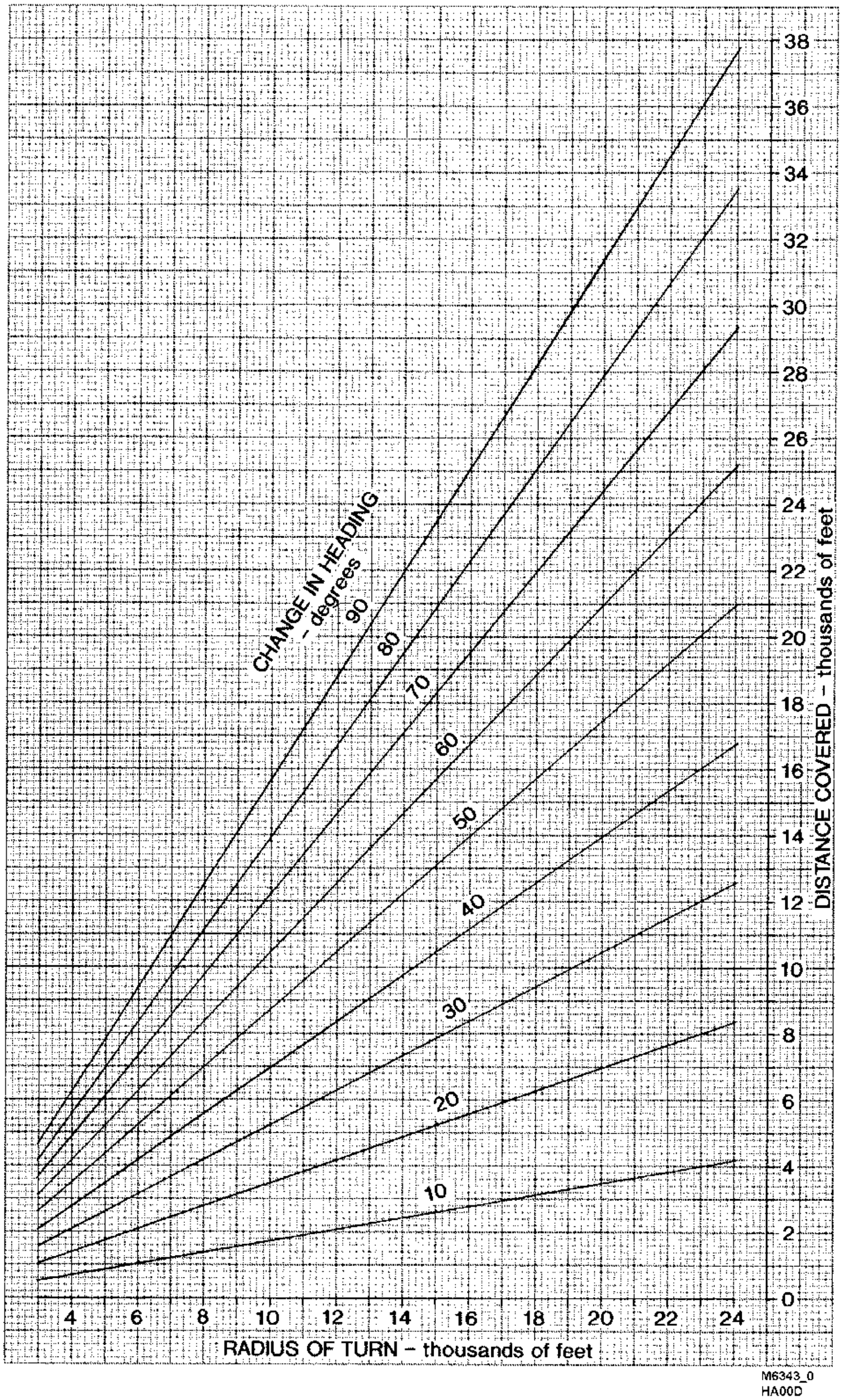
NET TAKE-OFF FLIGHT PATH
HORIZONTAL DISTANCE COVERED IN A STEADY TURN

Figure 5.25.8 shows the horizontal distance travelled for a given radius of steady turn.

Instructions for Use of Chart

- Enter Figure 5.25.8 with the radius of steady turn. Proceed vertically to the appropriate change in heading.
- Proceed horizontally to obtain distance covered.

HORIZONTAL DISTANCE COVERED IN A STEADY TURN



M6343_0
HA00D
014093AA

Figure 5.25.8

NET TAKE-OFF FLIGHT PATH
EFFECT OF WIND DURING STEADY TURN

When a turn is included in the flight path there will be, in general a change in wind component. This may be accounted for by the method shown in Figure 5.25.9.

Method

The flight path ABCDE is first drawn using the wind component in the take-off direction. It is intended to start a turn at point F, after which the wind component will change:

- From Figure 5.25.7 obtain the distance covered in the turn and mark point G at the end of the turn.
- Construct a second flight path AHJKL using the wind component after the turn.
- Bisect FG at M and construct the corrected flight path MNOP where MN is parallel to AJ and OP is parallel to KL.
- NO is equal in length to JK and at the same height.
- The end of the turn is then given by point Q at the same distance as G and the complete flight path is given by ABFMQNOP.

EFFECT OF WIND DURING STEADY TURN

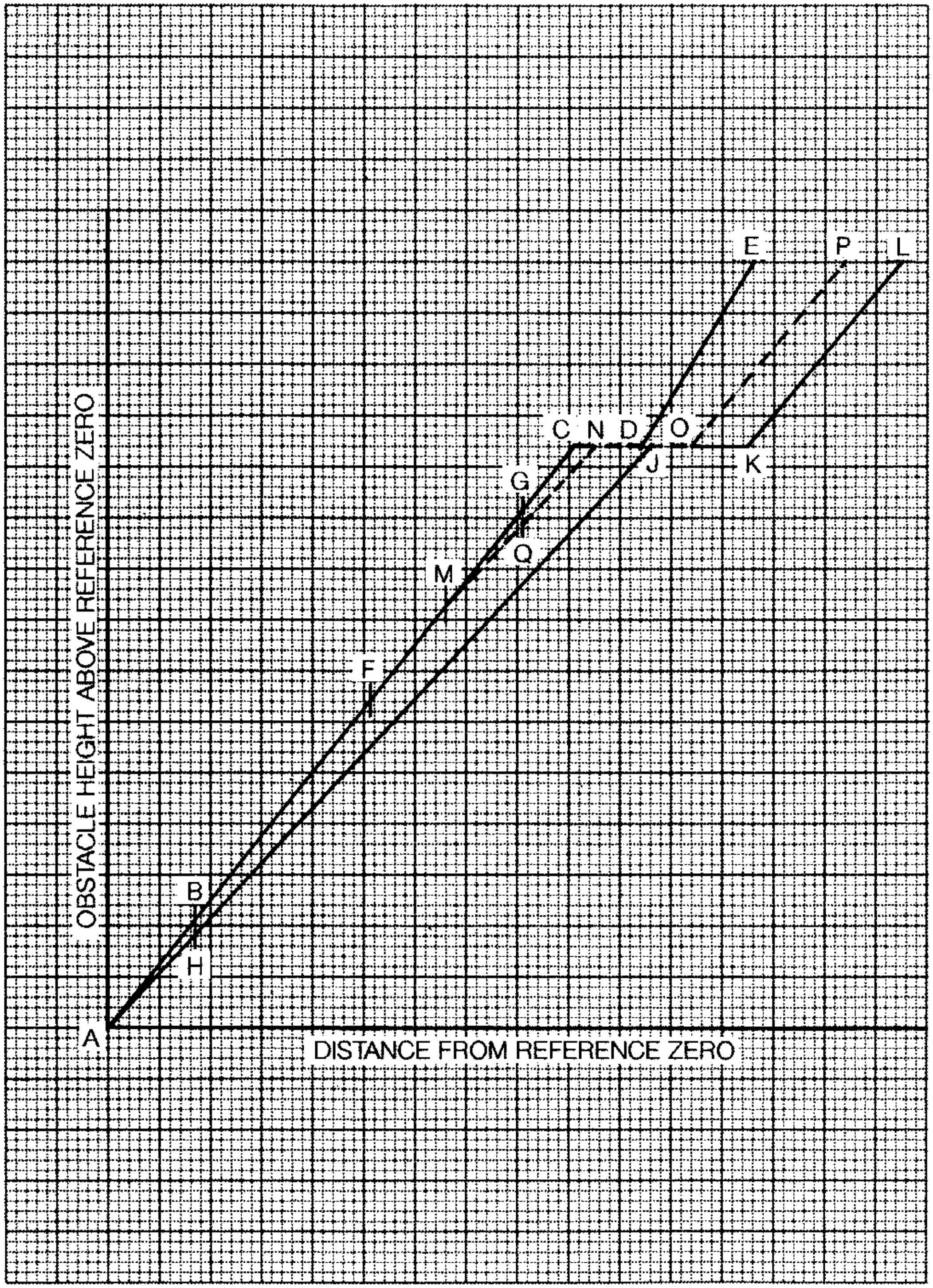


Figure 5.25.9

SUB-SECTION 5.30

TAKE-OFF FIELD LENGTH DE-RATE

This information is to be supplied at a later date.

SUB-SECTION 5.35

TAKE-OFF FLIGHT PATH DE-RATE

This information is to be supplied at a later date.

SUB-SECTION 5.40

EN-ROUTE DATA

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INTRODUCTION

This Sub-section contains data for use in ensuring compliance with the operating regulations relating to en-route flight.

EN-ROUTE NET GRADIENT OF CLIMB (ONE ENGINE INOPERATIVE)

The en-route net climb gradient with one engine inoperative is shown on Figure 5.40.1 for varying weight, altitude and air temperature.

Associated Conditions

Engine	*One engine operating at maximum continuous thrust*
Engine Bleed Air	*Air conditioning bleed on; see below for the effect of engine antice bleed.*
Flaps	*0°*
Landing Gear	*Up*
Airspeed	*En-route climb speed given by Figure 5.10.2 except that in icing conditions, airspeed is increased to the minimum (see Pilot's Operating Manual, Section V Sub-section 2 - Figure 2, Speed for Use in Icing Conditions).*

Instructions for Use of Chart

The use of the chart is illustrated by arrowed broken lines.

- Enter the chart with air temperature and move up to the appropriate altitude curve.
- Proceed horizontally to the weight correction reference line and then follow the guidelinest to the required weight.
- If the engine antice system is OFF, pass through the reference line and read net gradient from the right hand scale.
- If the engine antice system is ON, follow the guidelines from the engine antice reference line down to the antice ON position and then read net gradient from the right hand scale.

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FILING INSTRUCTIONS:	Insert Temporary Change 23 into the Airplane Flight Manual **Section 5 - PERFORMANCE** as follows: **Sub-section 5.25: NET TAKE-OFF FLIGHT PATH - APR ON** • Page 1 of 12 to face AFM Page 8. • Page 3 of 12 to face AFM Page 12. **Sub-section 5.40: EN-ROUTE DATA** • Page 5 of 12 to face AFM Page 2. **Sub-section 5.55: GROSS PERFORMANCE** • Page 7 of 12 to face AFM Page 4. • Page 9 of 12 to face AFM Page 8. • Page 11 of 12 to face AFM Page 12.

SECTION 5 - PERFORMANCE

Sub-section 5.40 - EN-ROUTE DATA

EN-ROUTE NET GRADIENT OF CLIMB (ONE ENGINE INOPERATIVE)

Under* Associated Conditions*, read the following after the table:

> *NOTE: For a turning climb, up to and including a 15° bank angle, decrease net climb gradient by 1.0 percentage point.*

Instructions for Use of Chart

The use of the chart is illustrated by the broken arrowed lines:

- Enter the chart with air temperature and move up to the appropriate altitude curve.
- Proceed horizontally to the weight correction reference line and then follow the guidelines to the required weight.
- If the engine anti-ice system is OFF, pass through the reference line and read net gradient from the right hand scale.
- If the engine anti-ice system is ON, follow the guidelines from the ENGINE ANTICE reference line down to the ENGINE ANTICE ON position and then read net gradient from the right hand scale.
- Finally correct for bank angle, if required, by applying the associated bank angle correction:
  (e.g. Charted Net Gradient (ANTICE OFF) - Correction = .8% - 1.0% = -.2%)
  or
  (e.g. Charted Net Gradient (ANTICE ON) - Correction = 4% - 1.0% = 3%).

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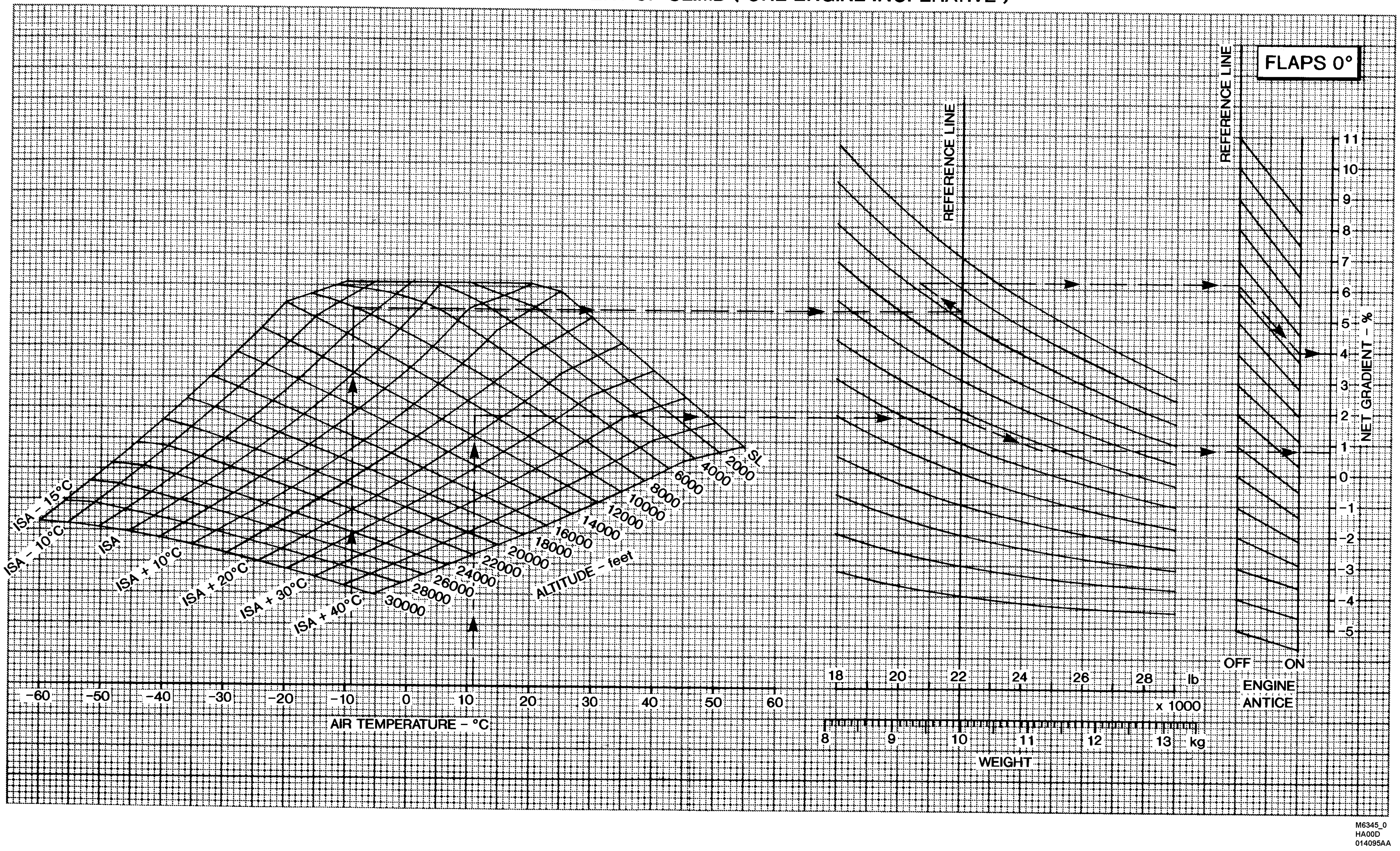
EN-ROUTE NET GRADIENT OF CLIMB (ONE ENGINE INOPERATIVE)



SUB-SECTION 5.45

LANDING WAT DATA

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INTRODUCTION

This Sub-section contains curves of weights at which for varying altitude and temperature the Go-around and Approach Climb requirements of 14 CFR PART 25.119 and 25.121(d) respectively are complied with and at which the energy input to the wheel brakes during a normal landing is within the wheel brake normal capacity.

On Figure 5.45.1 the less steep lines on the left of the chart are determined by the Approach Climb requirement with flaps 15°, landing gear up, and one engine failed. The steep lines on the right of the chart are determined by the wheel brake energy requirement.

MAXIMUM LANDING WEIGHT FOR ALTITUDE AND TEMPERATURE

Instructions For Use Of Chart

The use of the graph is illustrated by broken arrowed lines.

To Determine the Landing WAT Limit Weight

- Enter from the left with the field pressure altitude. Move across to the air temperature.
- From the intersection of the air temperature and field pressure altitude, read the weight on the bottom scale.

NOTES:

1. To obtain the effect of engine antice, add 10° C to the actual air temperature before entering the graph.

2. Refer to Sub-section 5.50 to obtain the maximum weight for landing field length available.

MAXIMUM LANDING WEIGHT FOR ALTITUDE AND TEMPERATURE

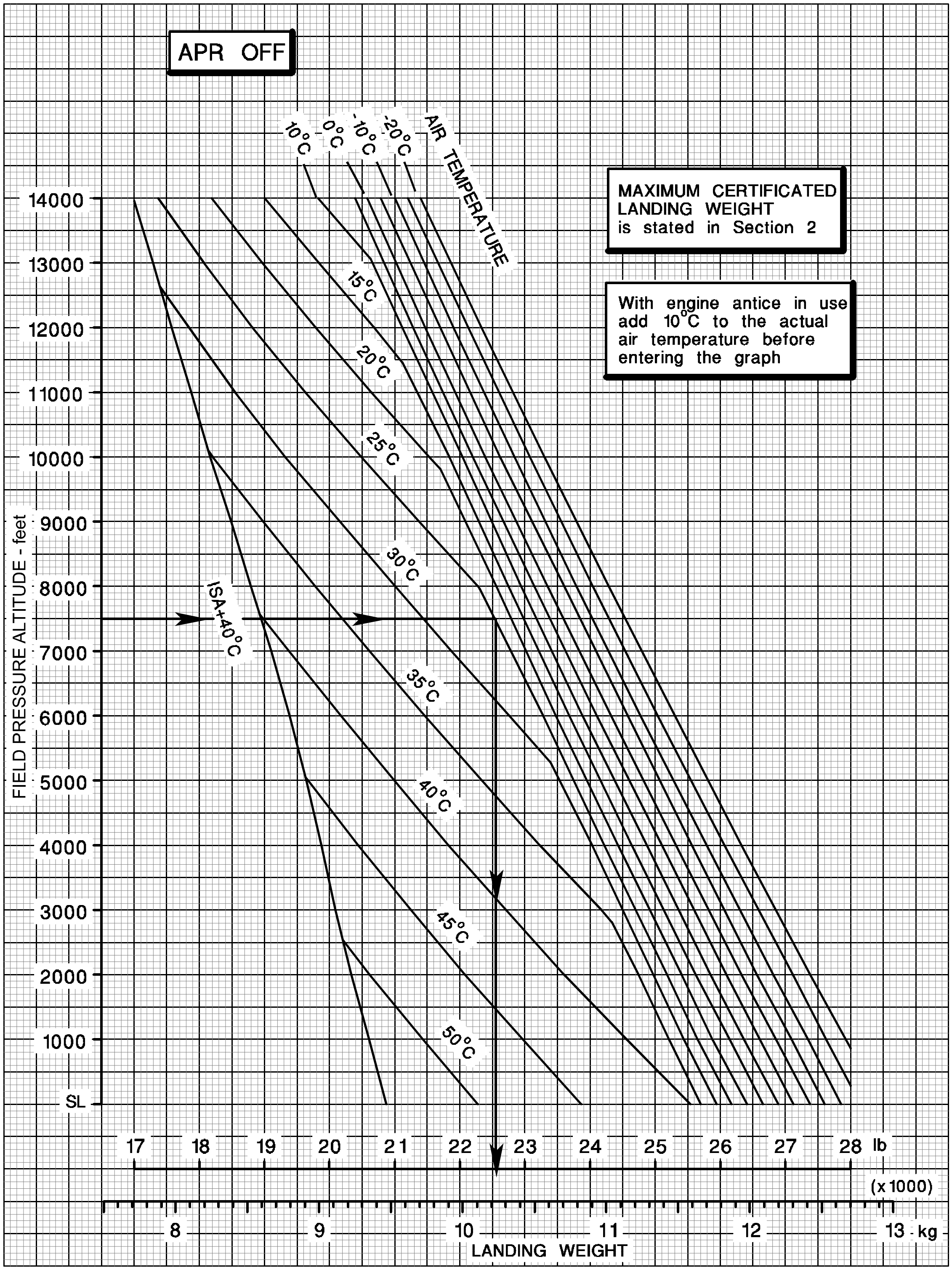

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Figure 5.45.1

SUB-SECTION 5.50

LANDING FIELD LENGTHS

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Figure 5.50.4 - WIND AND GRADIENT RESTRICTIONS FOR LANDING ON SLIPPERY RUNWAY 10

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INTRODUCTION

The maximum weight for landing distance available (dry runway factored landing distance) is given on Figure 5.50.1. The gross landing distance measured in performance tests is equal to 60% of that scheduled in Figure 5.50.1.

Figure 5.50.2 provides a convenient method of determining unfactored landing field length or the landing distance required for 80% runway utilization.

The maximum weight thus derived will not necessarily be the maximum permissible weight for the landing because the landing WAT curves (see Sub-section 5.45) might be critical.

MAXIMUM LANDING WEIGHT FOR LANDING DISTANCE AVAILABLE

The maximum landing weight for landing distance available is given for varying field pressure altitudes and wind components on Figure 5.50.1 for dry runways only.

Figure 5.50.3 shows the effect of a slippery runway on landing performance (see NOTE 3).

See NOTE 6 for landing performance on a wet runway.

Associated conditions

Engines	*Thrust levers closed at 50 feet*
Flaps	*45 °*
Landing Gear	*Down*
Lift Dump	*Selected after touchdown*
Wheel Brakes	*Normal system selected*
Airspeed	V_{REF} *at 50 feet (see Figure 5.10.3)*

NOTES:

1. *The wind grid is factored in such a way that the effect of not more than 50% of headwinds and not less than 150% of tailwinds is obtained.*

   Reported winds may therefore be used directly in the grids but, when a landing is to be made into a headwind greater than 40 knots, the performance appropriate to a headwind of 40 knots is to be obtained from the graph.

2. *Figure 5.50.1 is based on ISA temperature conditions as required by the operating regulations. For information, landing distance required is increased by about 3% for every 10 °C increase in temperature.*

Continued Next Page ⟶

MAXIMUM LANDING WEIGHT FOR LANDING DISTANCE AVAILABLE (continued)

3. *Figure 5.50.3 gives the effect on landing distance of a very slippery surface having a braking coefficient of friction of 0.05, and is intended to cover the effect of icy surfaces and aquaplaning.*

   Figure 5.50.3 is valid for runways with approximately zero gradient and with no tailwind. Landing downhill or with a tailwind on a slippery runway should be avoided if possible.

   The limiting combinations of wind and gradient for which Figure 5.50.3 is valid are shown on Figure 5.50.4. Combinations of wind and gradient lying in the shaded area are not permitted.

   No reduction in stopping distance is credited for the use of thrust reversers and it is assumed that when thrust reverse is not being used, one engine is shut down after touchdown to assist deceleration.

4. *If flaps 25° is used for landing, reduce the landing distance available by 10% before entering Figure 5.50.1.*

5. *For a landing with flaps up, reduce the landing distance available by 30% before entering Figure 5.50.1.*

6. *For wet runways, reduce the landing distance available by 15% before entering Figure 5.50.1.*

Instructions for Use of Charts

The broken arrowed lines illustrate the use of the graphs.

To Determine Maximum Landing Weight for Landing Distance Available On Dry Runway.

- Enter Figure 5.50.1 with the landing distance available and go to the reference line of the wind correction grid and follow the guide lines to the appropriate wind component.
- From here move horizontally to the appropriate altitude line and then move vertically down to the weight scale.

To Determine Landing Distance Required for Other Operational Factor Requirements.

- Enter Figure 5.50.2 with the Landing Distance Available obtained from Figure 5.50.1 and go right to the reference line of the desired operational factor. Then move to the bottom scale to read the equivalent landing distance.

To Determine Maximum Landing Weight for Landing Distance Available On Slippery Runway.

- Enter Figure 5.50.4 with the runway gradient and reported wind component.
- Combinations of wind and gradient lying in the shaded area are outside the validity of Figure 5.50.3 and are not permitted.

Continued Next Page ⟶

Instructions for Use of Charts (continued)

- Reduce the landing distance available to obtain an unfactored landing distance.

  (For a dry runway, 14 CFR PARTs require unfactored landing distance to be 60% of landing distance available, but there may be occasions when a lower standard of safety is acceptable to the operator and to the Airworthiness Authority).

- Enter Figure 5.50.3 with the unfactored landing distance and follow the guidelines to read the equivalent scheduled landing distance available on the right.

- Use this equivalent distance in Figure 5.50.1 instead of the landing distance available to obtain a landing weight for a slippery runway, with or without the use of lift dump.

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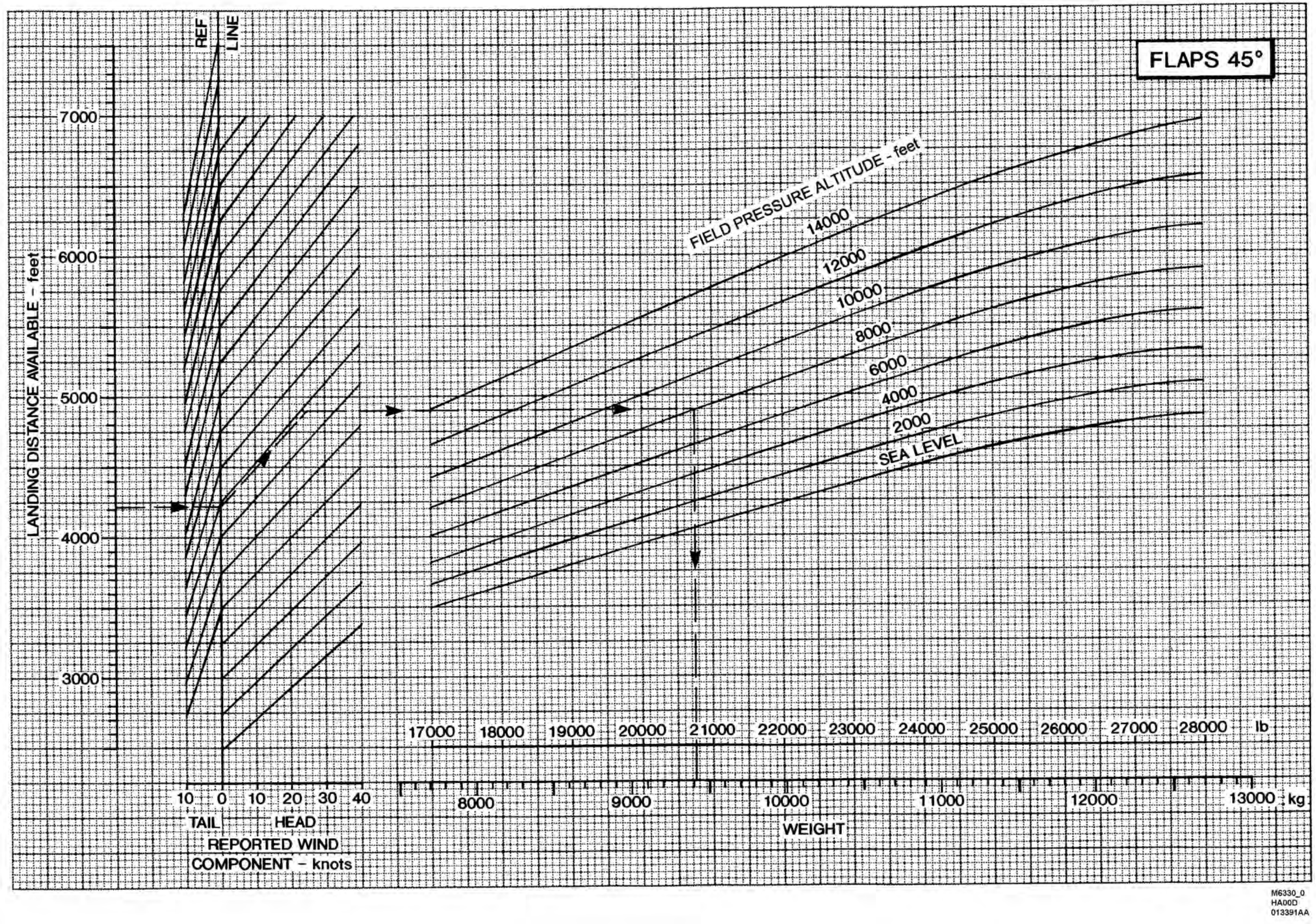
MAXIMUM LANDING WEIGHT FOR LANDING DISTANCE AVAILABLE



OPERATIONAL FACTOR ADJUSTMENTS FOR LANDING DISTANCE

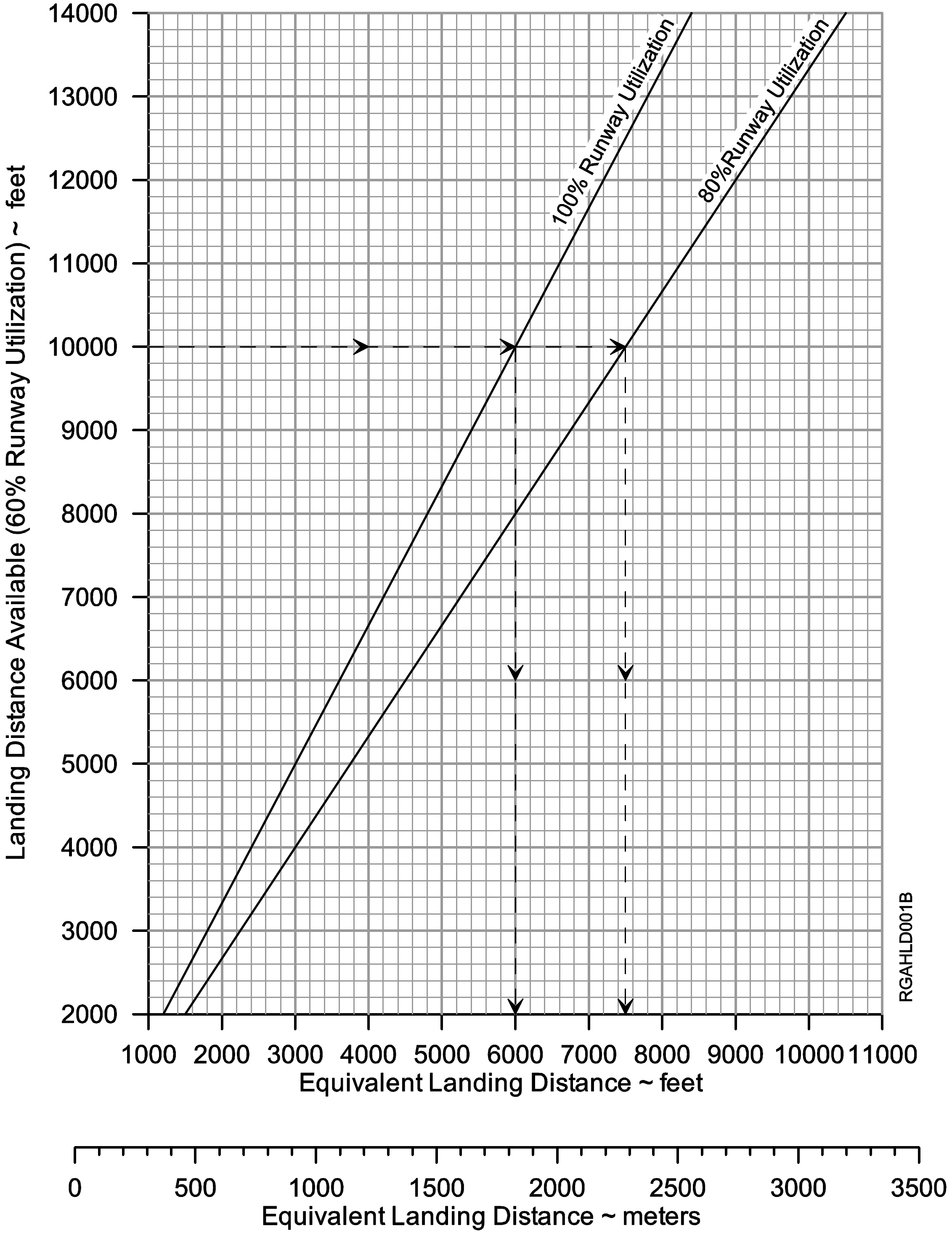


Figure 5.50.2

EFFECT OF A SLIPPERY RUNWAY ON LANDING DISTANCE AVAILABLE

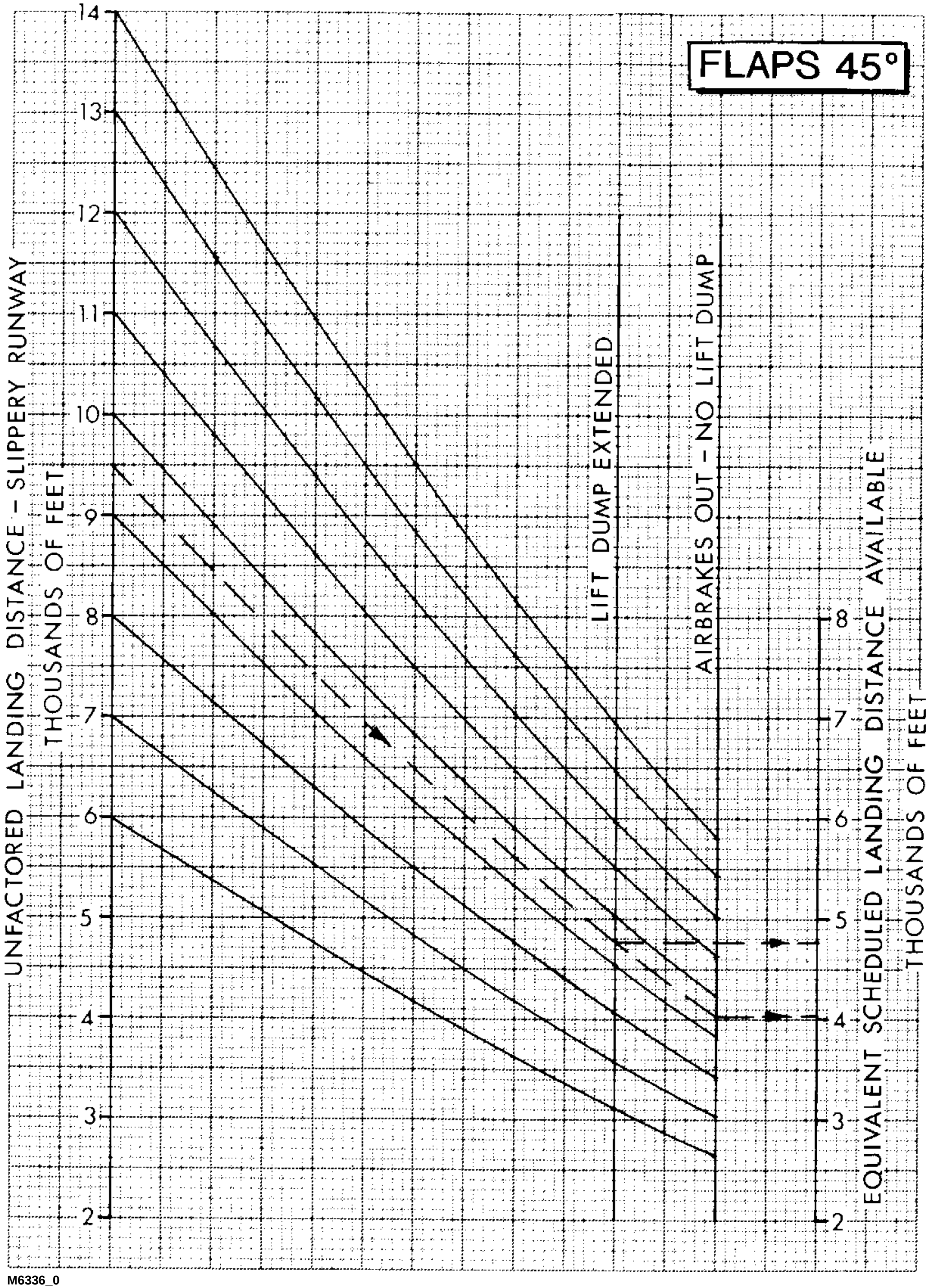


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Figure 5.50.3

WIND AND GRADIENT RESTRICTIONS FOR LANDING ON SLIPPERY RUNWAY

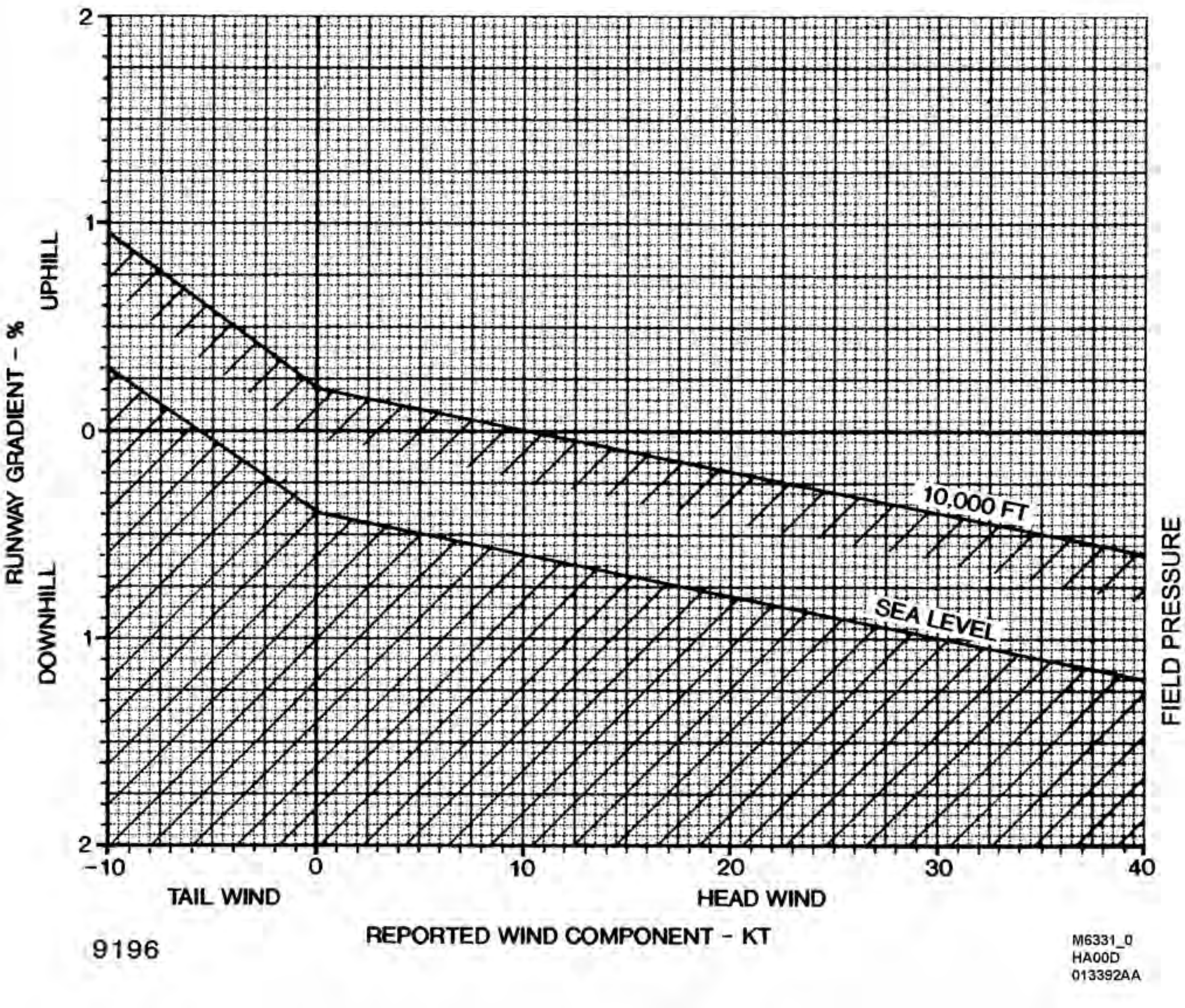

Figure 5.50.4

SUB-SECTION 5.55

GROSS PERFORMANCE

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INTRODUCTION

This Sub-section gives gross gradients of climb.

Gross gradients for first and second segment and final take-off climb are the basis of the take-off WAT curves in Sub-section 5.15.

Gross gradients for approach and go-around climbs in accordance with 14 CFR PART 25.121 (d) and 14 CFR PART 25.119 are the basis of the landing WAT curves in Sub-section 5.45.

Because a fuel jettison system is not installed on the airplane, the approach and go-around climbs are also used in determining the take-off WAT curves in Sub-section 5.15 in accordance with 14 CFR PART 25.1001.

At a weight equal to the maximum take-off weight permitted by Figures 5.15.1, 5.15.2 and 5.15.3 for the altitude and temperature of the departure airfield, the gradients shown in Figures 5.55.4 and 5.55.5 comply with 14 CFR PART 25.121 (d) and PART 25.119 respectively.

FIRST AND SECOND SEGMENT CLIMB GRADIENT - FLAPS 15°

The gross gradient of climb for the first and second segments with flaps extended to 15° is shown on Figure 5.55.1 for varying weight, altitude and air temperature.

Associated Conditions

Engines	*One engine operating at maximum take-off thrust with APR ON, the other engine stopped.*
Engine Bleed Air	*Air conditioning bleed off ; see NOTE 1 for the effect of engine antice bleed.*
Flaps	*15°*
Landing Gear	*Down for the first segment. Up for the second segment.*
Airspeed	*Take-off safety speed V_2 (refer to TABULATED TAKEOFF DATA Sub-section 5.20)*

NOTES:

1. *To take account of engine antice bleed, add 10° C to the actual air temperature before entering the graph.*
2. *The gradients given are those away from ground effect.*

Instructions for Use of Chart

The use of the graph is illustrated by broken arrowed lines.

- Enter with air temperature and move up to the appropriate field pressure altitude.
- Proceed horizontally to the weight grid reference line then follow the guidelines to the required airplane weight.
- Proceed horizontally to intersect the line labelled FIRST SEGMENT or SECOND SEGMENT and read off the gross gradient of climb from the bottom scale.

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SECTION 5 - PERFORMANCE

Sub-section 5.55 - GROSS PERFORMANCE

FIRST AND SECOND SEGMENT CLIMB GRADIENT - FLAPS 15°

Under* Associated Conditions*, read the following after NOTE 2:

> 3. *For a turning climb, up to and including a 15° bank angle, decrease gross climb gradient by 1.0 percentage point.*

Instructions for Use of Chart

The use of the chart is illustrated by the broken arrowed lines:

- Enter with the air temperature and move up to the appropriate field pressure altitude.
- Proceed horizontally to the weight grid reference line and then follow the guidelines to the required airplane weight.
- For FIRST SEGMENT, proceed horizontally to intersect the line labelled FIRST SEGMENT and read off the gross gradient of climb from the bottom scale.
- For SECOND SEGMENT, proceed horizontally to intersect the line labelled SECOND SEGMENT and read off the gross gradient of climb from the bottom scale.
- Finally correct for bank angle, if required, by applying the associated bank angle correction:
  (e.g. Charted Gross Gradient (FIRST SEGMENT) - Correction = 1.83% - 1.0% = .83%)
  or
  (e.g. Charted Gross Gradient (SECOND SEGMENT) - Correction = 3.4% - 1.0% = 2.4%).

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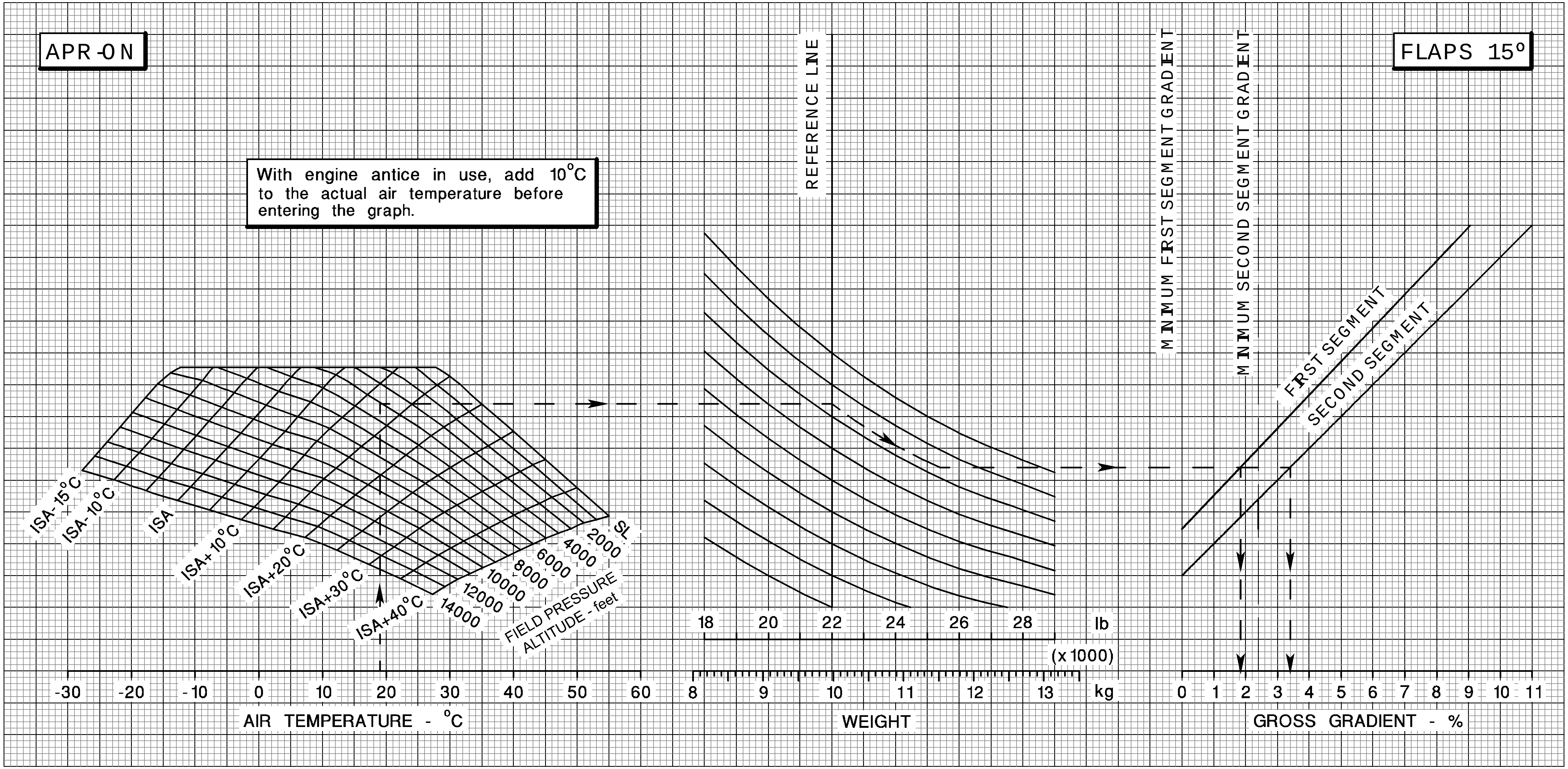
FIRST AND SECOND SEGMENT CLIMB GRADIENT



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FIRST AND SECOND SEGMENT CLIMB GRADIENT - FLAPS 0°

The gross gradient of climb for the first and second segments with flaps retracted is shown on Figure 5.55.2 for varying weight, altitude and air temperature.

Associated Conditions

Engines	*One engine operating at maximum take-off thrust with APR ON, the other engine stopped.*
Engine bleed air	*Air conditioning bleed off; see NOTE 1 for the effect of engine antice bleed.*
Flaps	*0°*
Landing gear	*Down for the first segment.* *Up for the second segment.*
Airspeed	*Take-off safety speed V_2 (refer to TABULATED TAKEOFF DATA Sub-section 5.20)*

NOTES:

1. *To take account of engine antice bleed, add 10° C to the actual air temperature before entering the graph.*
2. *The gradients given are those away from ground effect.*

Instructions for Use of Chart

The use of the graph is illustrated by broken arrowed lines.

- Enter with air temperature and move up to the appropriate field pressure altitude.
- Proceed horizontally to the weight grid reference line then follow the guidelines to the required airplane weight.
- Proceed horizontally to intersect the line labelled FIRST SEGMENT or SECOND SEGMENT and read off the gross gradient of climb from the bottom scale.

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SECTION 5 - PERFORMANCE

Sub-section 5.55 - GROSS PERFORMANCE

FIRST AND SECOND SEGMENT CLIMB GRADIENT - FLAPS 0°

Under* Associated Conditions*, read the following after NOTE 2:

3. *For a turning climb, up to and including a 15° bank angle, decrease gross climb gradient by 1.0 percentage point.*

Instructions for Use of Chart

The use of the chart is illustrated by the broken arrowed lines:

- Enter with air temperature and move up to the appropriate field pressure altitude.
- Proceed horizontally to the weight grid reference line and then follow the guidelines to the required airplane weight.
- For FIRST SEGMENT, proceed horizontally to intersect the line labelled FIRST SEGMENT and read off the gross gradient of climb from the bottom scale.
- For SECOND SEGMENT, proceed horizontally to intersect the line labelled SECOND SEGMENT and read off the gross gradient of climb from the bottom scale.
- Finally correct for bank angle, if required, by applying the associated bank angle correction:
  (e.g. Charted Gross Gradient (FIRST SEGMENT) - Correction = 3.4% - 1.0% = 2.4%)
  or
  (e.g. Charted Gross Gradient (SECOND SEGMENT) - Correction = 5.1% - 1.0% = 4.1%).

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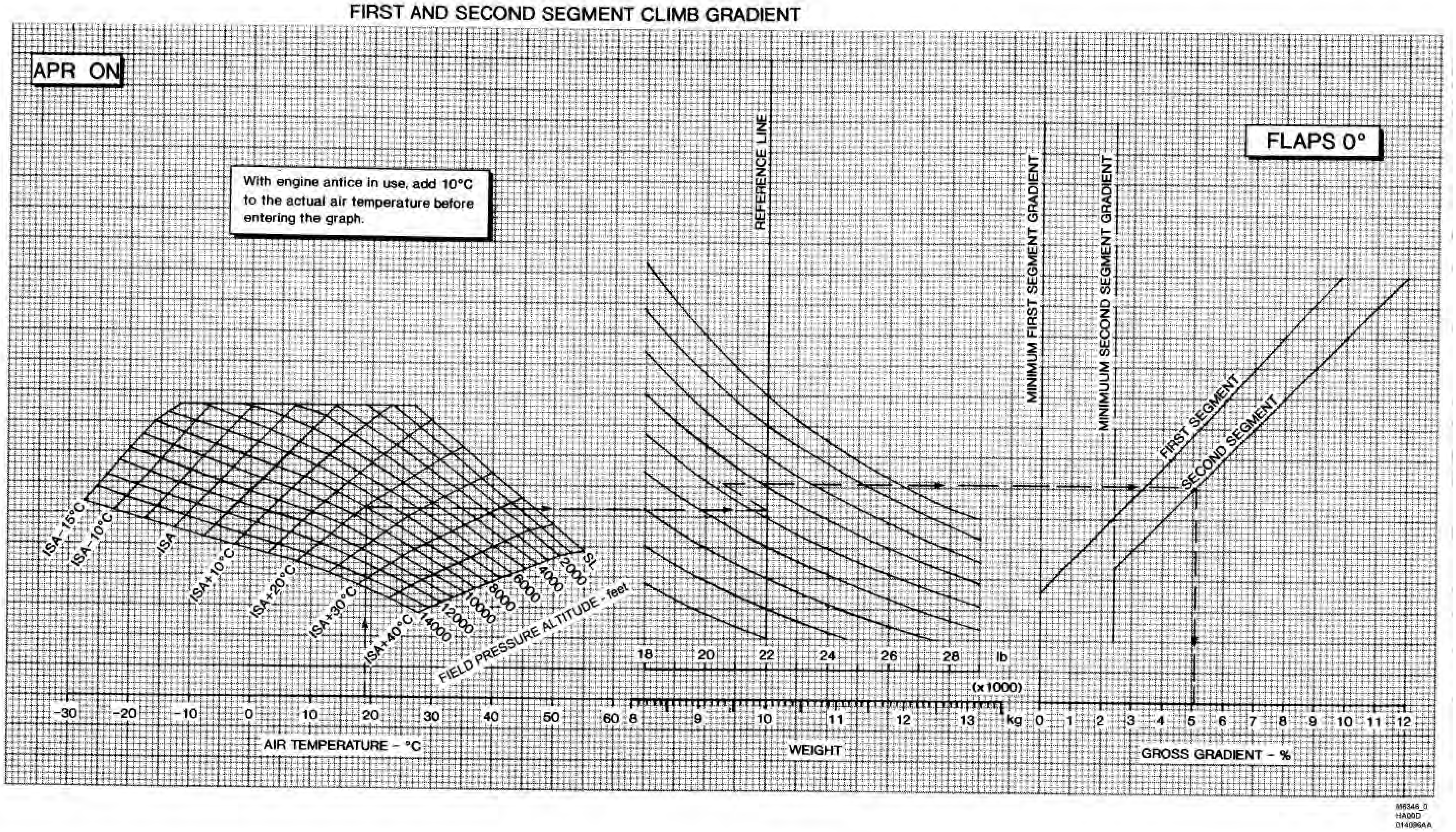

With engine antice in use, add 10°C to the actual air temperature before entering the graph.

Figure 5.55.2

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FINAL TAKE-OFF CLIMB GRADIENT

The gross and net gradients of climb for the final take-off configuration are shown on Figure 5.55.3 for varying weight, altitude and air temperature.

Associated Conditions

Engines	*One engine operating at maximum continuous thrust, the other engine stopped.*
Engine Bleed Air	*Air conditioning bleed off; see NOTE 1 for the effect of engine antice bleed.*
Flaps	*0°*
Landing Gear	*Up.*
Airspeed	*Final take-off climb speed* V_{FTO} *. (See Figure 5.10.1)*

NOTES:

1. *To take account of engine antice bleed, add 10° C to the actual air temperature before entering the graph.*

2. *The gradients given are those away from ground effect.*

Instructions for Use of Chart

The use of the graph is illustrated by broken arrowed lines.

- Enter with air temperature and move up to the appropriate field pressure altitude.
- Proceed horizontally to the weight grid reference line and then follow the guidelines to the required airplane weight.
- Move horizontally to the gross gradient reference line and then either continue horizontally to read gross gradient from the scale at the right, or follow the guidelines down to the net gradient position before reading net gradient from the scale at the right.

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SECTION 5 - PERFORMANCE

Sub-section 5.55 - GROSS PERFORMANCE

FINAL TAKE-OFF CLIMB GRADIENT

Under* Associated Conditions*, read the following after NOTE 2:

3. *For a turning climb, up to and including a 15° bank angle, decrease climb gradient by 1.0 percentage point.*

Instructions for Use of Chart

The use of the chart is illustrated by the broken arrowed lines:

- Enter with the air temperature and move up to the appropriate field pressure altitude.
- Proceed horizontally to the weight grid reference line and then follow the guidelines to the required airplane weight.
- For GROSS GRADIENT, move horizontally to the gross gradient reference line and continue horizontally to read gross gradient from the scale at the right.
- For NET GRADIENT, follow the guidelines down from the gross gradient reference line to the net gradient reference line and read the net gradient from the scale at the right.
- Finally correct for bank angle, if required, by applying the associated bank angle correction:
  (e.g. Charted Gross Gradient - Correction = 2.8% - 1.0% = 1.8%)
  or
  (e.g. Charted Net Gradient - Correction = 2.0% - 1.0% = 1.0%).

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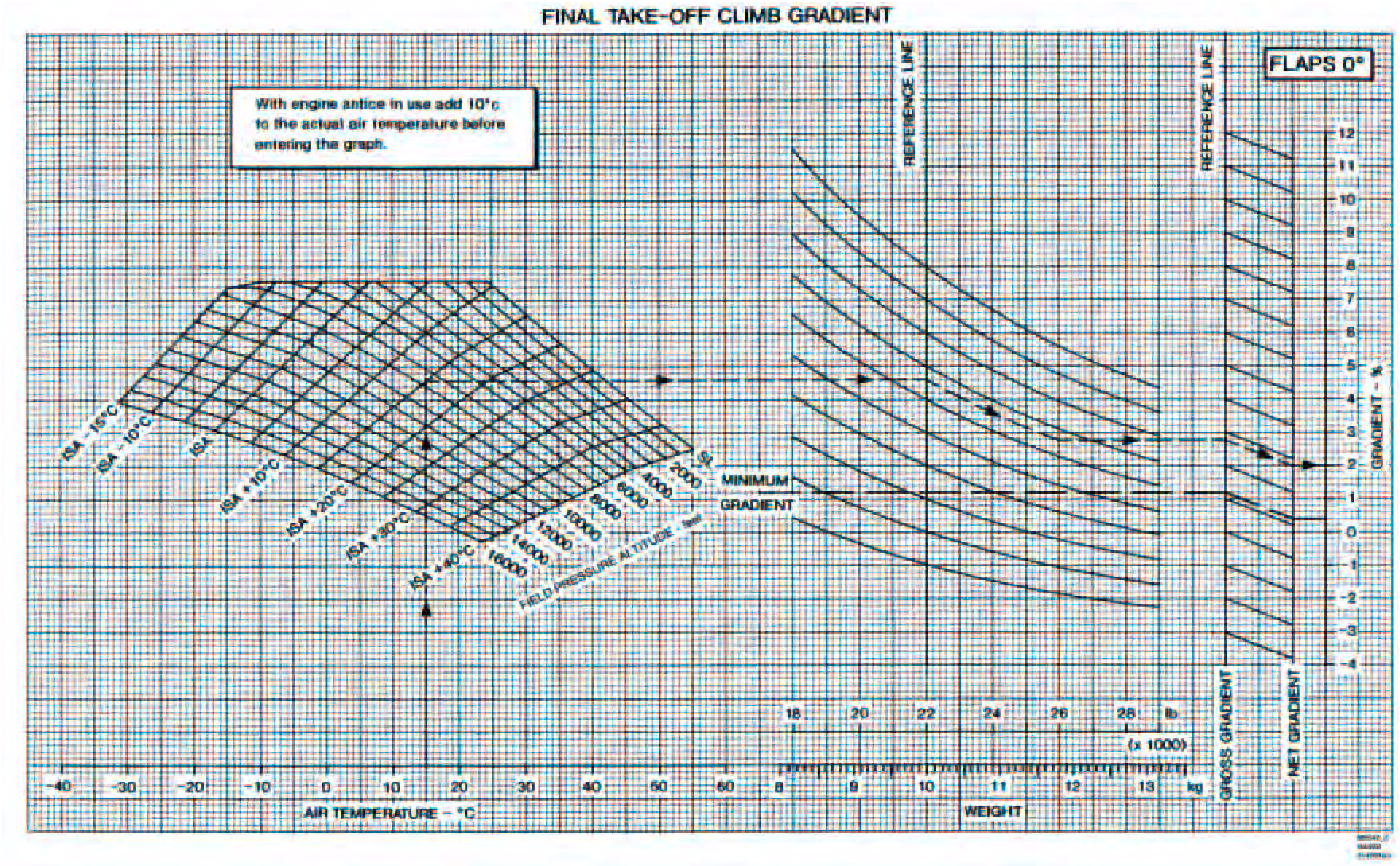

With engine antice in use add 10°c to the actual air temperature before entering the graph.

Figure 5.55.3

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APPROACH CLIMB GRADIENT

The gross gradient of climb in the go-around configuration is shown on Figure 5.55.4 for varying weight, airfield altitude and air temperature.

Associated Conditions

Engines	*One engine operating at maximum take-off thrust with APR OFF; the other engine stopped.*
Engine Bleed Air	*Air conditioning bleed off; see NOTE for the effect of engine antice bleed.*
Flaps	*15° or 0°*
Landing Gear	*Up*
Airspeed	*Flaps 15°:* V_{REF} *Flaps 0°:* V_{REF} *+ 10 knots*

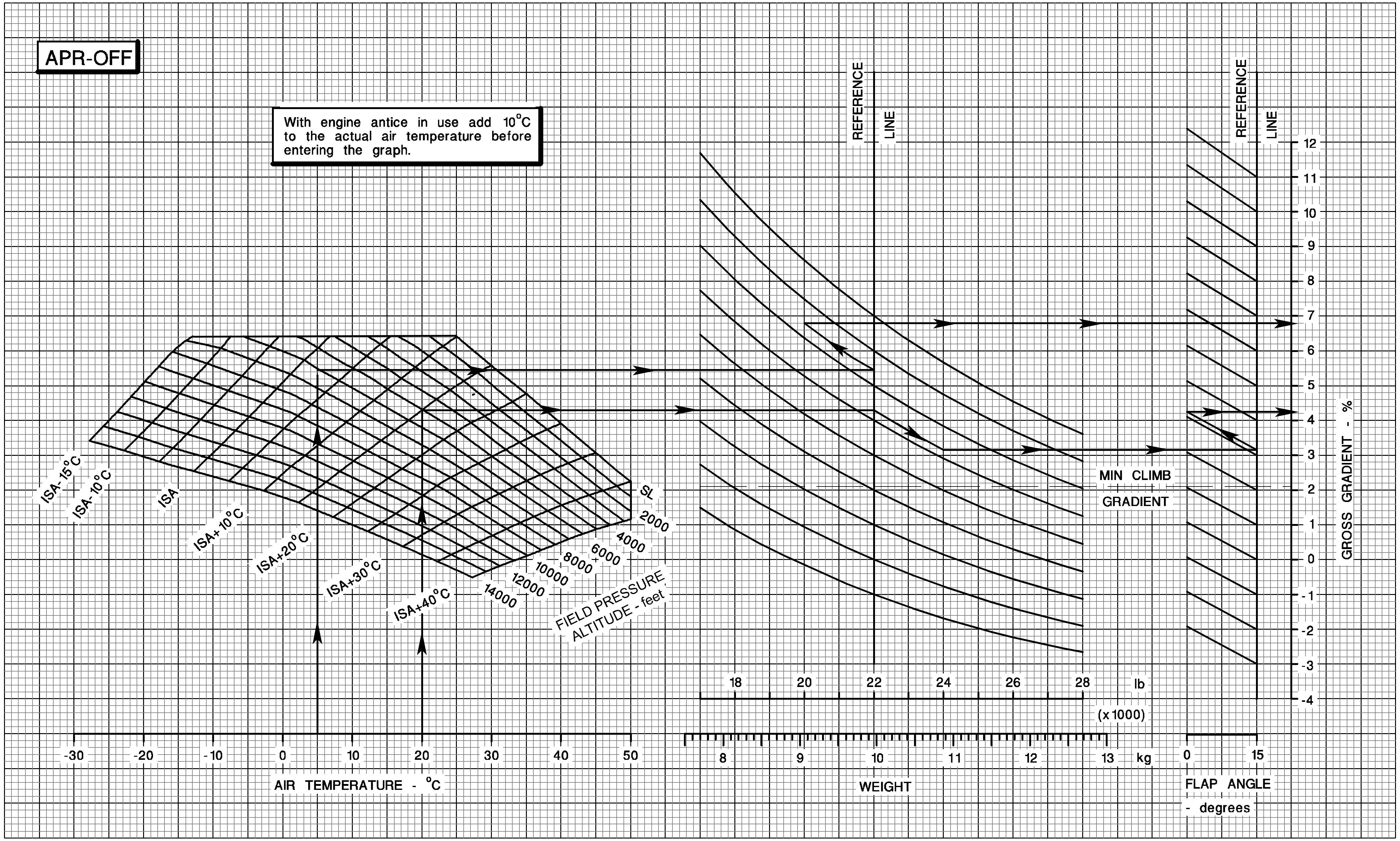
NOTE: To take account of engine antice bleed, add 10° C to the actual air temperature before entering the graph.

Instructions for Use of Chart

The use of the graph is illustrated by the broken arrowed lines.

- Enter with air temperature and move up to the appropriate field pressure altitude.
- Proceed horizontally to the weight grid reference line and then follow the guidelines to the appropriate airplane weight.
- Continue to the right to meet the flap correction grid reference line and then either continue horizontally to read flaps 15° gross gradient from the scale at the right or follow the guidelines to the flaps 0° position before reading the gross gradient from the scale at the right.

APPROACH CLIMB GRADIENT



With engine antice in use add 10°C to the actual air temperature before entering the graph.

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Figure 5.55.4

GO-AROUND CLIMB GRADIENT

The gross gradient of climb for the go-around configuration is shown on Figure 5.55.5 for varying weight, field pressure altitude and air temperature.

Associated Conditions

Engines	Both engines operating at maximum take-off thrust with APR OFF.
Engine Bleed Air	Air conditioning bleed off; see NOTE for the effect of engine antice bleed.
Flaps	45° or 25°
Landing Gear	Down
Airspeed	Flaps 45°: not greater than V_{REF} Flaps 25°: not greater than V_{REF} + 5 knots.

NOTE: To take account of engine antice bleed, add 10° C to the actual air temperature before entering the graph.

Instructions for Use of Chart

The use of the graph is illustrated by the broken arrowed lines.

- Enter with air temperature and move up to the appropriate field pressure altitude.
- Proceed horizontally to the weight grid reference line and then follow the guidelines to the appropriate airplane weight.
- Continue to the right to meet the flap correction grid reference line and then either continue horizontally to read the flaps 45° gross gradient from the scale at the right or follow the guidelines to the flaps 25° position before reading the gross gradient from the scale at the right.

GO-AROUND CLIMB GRADIENT

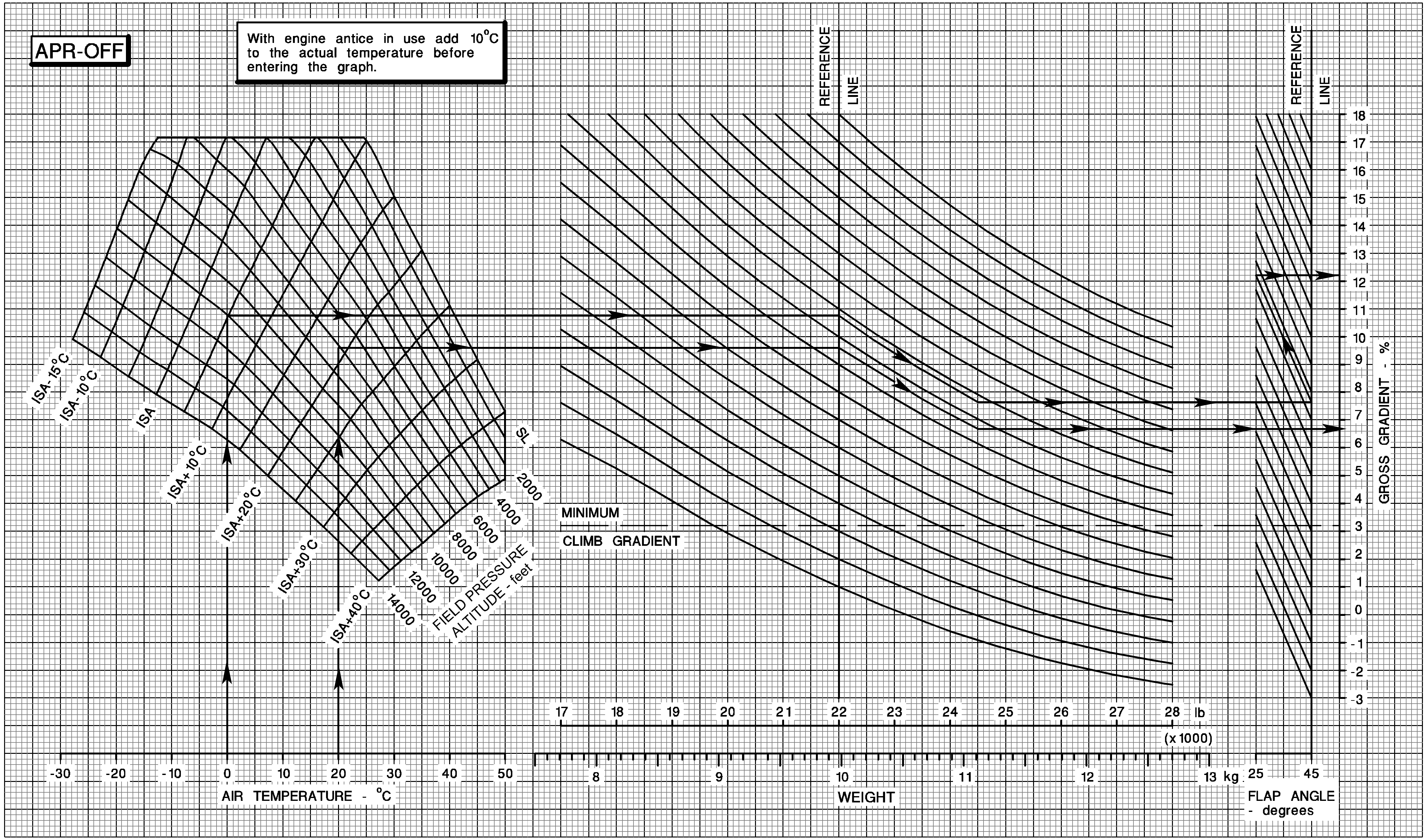

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Figure 5.55.5

SECTION - 6

WEIGHT & BALANCE

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PART 1 - AS CERTIFICATED

BASIC EMPTY WEIGHT and BALANCE - As Certificated

(Page 3 will be added with the airplane actual weight data)

WEIGHT and BALANCE TERMINOLOGY

Approved Loading Envelope - Those combinations of airplane weight and center of gravity which define the limits beyond which loading is not approved.

Arm - The distance from the center of gravity of an object to a line about which moments are to be computed.

Basic Empty Weight (BEW) - The weight of an empty airplane including full engine oil and unusable fuel. This equals empty weight plus the weight of unusable fuel and the weight of all the engine oil required to fill the lines and tanks. Basic empty weight is the basic configuration from which loading data is determined.

Center of Gravity (CG) - A point at which the weight of an object may be considered concentrated for weight and balance purposes.

CG Limits - The extreme *center of gravity* locations within which the airplane must be operated at a given weight.

Datum - A vertical plane perpendicular to the airplane longitudinal axis from which fore and aft measurements are made for weight and balance purposes.

Empty Weight - The weight of an empty airplane before any oil or fuel has been added. This includes all permanently installed equipment, fixed ballast, full hydraulic fluid, full chemical toilet fluid and all other operating fluids full except the engines, tanks and lines which do not contain any engine oil or fuel.

Engine Oil - That portion of the engine oil which can be drained from the engine.

Jack Point - Points on the airplane identified by the manufacturer as suitable for supporting the airplane for weighing or other purposes.

Landing Weight - The weight of the airplane at landing touchdown.

Levelling Points - Those points which are used to level the airplane during the weighing process.

Maximum Weight - The largest weight allowed by design, structural, performance or other limitations.

Maximum Zero Fuel Weight (MZFW) - The maximum allowable weight of the airplane in a zero fuel condition. All weight in excess of MZFW must consist of fuel.

Minimum Operating Weight - The minimum weight at which the gust criteria for structural integrity has been shown.

Moment - A measure of the rotational tendency of a weight, about a specified line, mathematically equal to the product of the weight and the arm.

Payload - Weight of occupants, cargo and baggage.

Ramp Weight - The airplane weight at engine start, assuming all loading is completed.

Standard Mean Chord (SMC) - The average distance from the wing leading edge to the trailing edge.

Station - The longitudinal distance from some point to the zero datum or zero fuselage station.

Take-off Weight - The weight of the airplane at lift-off from the runway.

Tare - The apparent weight which may be indicated by scales before any load is applied.

Unusable Fuel - The fuel remaining after consumption of usable fuel.

Usable Fuel - That portion of the total fuel which is available for consumption as determined in accordance with applicable regulatory standards.

Useful Load - The difference between the airplane ramp weight and the basic empty weight (payload + usable fuel)

Zero Fuel Envelope - The range of zero fuel weight and center of gravity used for determining fuel loading procedures.

Zero Fuel Weight (ZFW) - The airplane ramp weight minus the weight of fuel on board.

CONVERSION FACTORS

Numeric values in this section are US Primary and Metric Secondary in "( )".
The following conversion factors are used:

- Weight: 1 Kilogram = 2.2046 Pounds.
- Length: 1 Meter = 3.2808 Feet or 39.3700 Inches.
- Moment: 1 Kilogram-Meter = 7.2328 Pounds-Feet.
- Pressure: 1 Kilogram/Meter^2 = 0.2048 Pounds/Foot^2.
- Volume: 1 Liter = 0.2642 Gallon.
- Weight/Liquid Volume: 1 Kilogram/Liter = 8.3444 Pounds/Gallon.

WEIGHT and CENTER of GRAVITY (CG) LIMITATIONS/DATA

See Figures 6.1 and 6.2 for the Loading and Flight Envelope

Weight Limitations	**lb (kg) Unless otherwise noted**
Maximum Ramp Weight	28,120 (12,755)
Maximum Take-Off Weight	28,000 (12,701)
Maximum Landing Weight (except in an emergency)	23,350 (10,591)
Maximum Zero Fuel Weight	18,450 (8369)
Minimum Zero Fuel Weight	14,120 (6405)
Maximum Wing Unsymmetrical Fuel Load	500 (227)
Maximum Cabin Floor Loading	
Center Aisle	60 lb/ft^2 (293 kg/m^2)
Outboard Raised Area	50 lb/ft^2 (244 kg/m^2)
Maximum Jacking Weight	25,255 (11,456)

NOTE: Refer to the Maintenance Manual for Jacking Requirements.

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Center of Gravity (CG) Data

NOTE: All CG values and calculations in this section are expressed in feet or meters from the CG datum.

The CG Datum (0.000) is at fuselage station 353.04 inches or 8.967 meters, which is 11 feet or 3.353 meters forward of the Reference Point located on the aft fuselage, below the right engine pylon. Arms measured from the CG datum are negative forward and positive aft. See Figure 6.3 for the noted locations.

When expressing the airplane CG in percentage of Standard Mean Chord (SMC), use the following equation:

Using Feet	Using Meters
$\text{CG in \% SMC} = \frac{(X + 1.308)}{7.263} \times 100$	$\text{CG in \% SMC} = \frac{(X + 0.399)}{2.214} \times 100$

Where X is the airplane CG, 1.308 feet or 0.399 meters is the arm of the SMC leading edge and 7.263 feet or 2.214 meters is the length of the SMC.

As an example, using the CG datum where X = 0, the % SMC is calculated as follows:

Using Feet	Using Meters
$\frac{(0 + 1.308)}{7.263} \times 100 = 18\% \text{ SMC}$	$\frac{(0 + 0.399)}{2.214} \times 100 = 18\% \text{ SMC}$

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TEMPORARY CHANGE

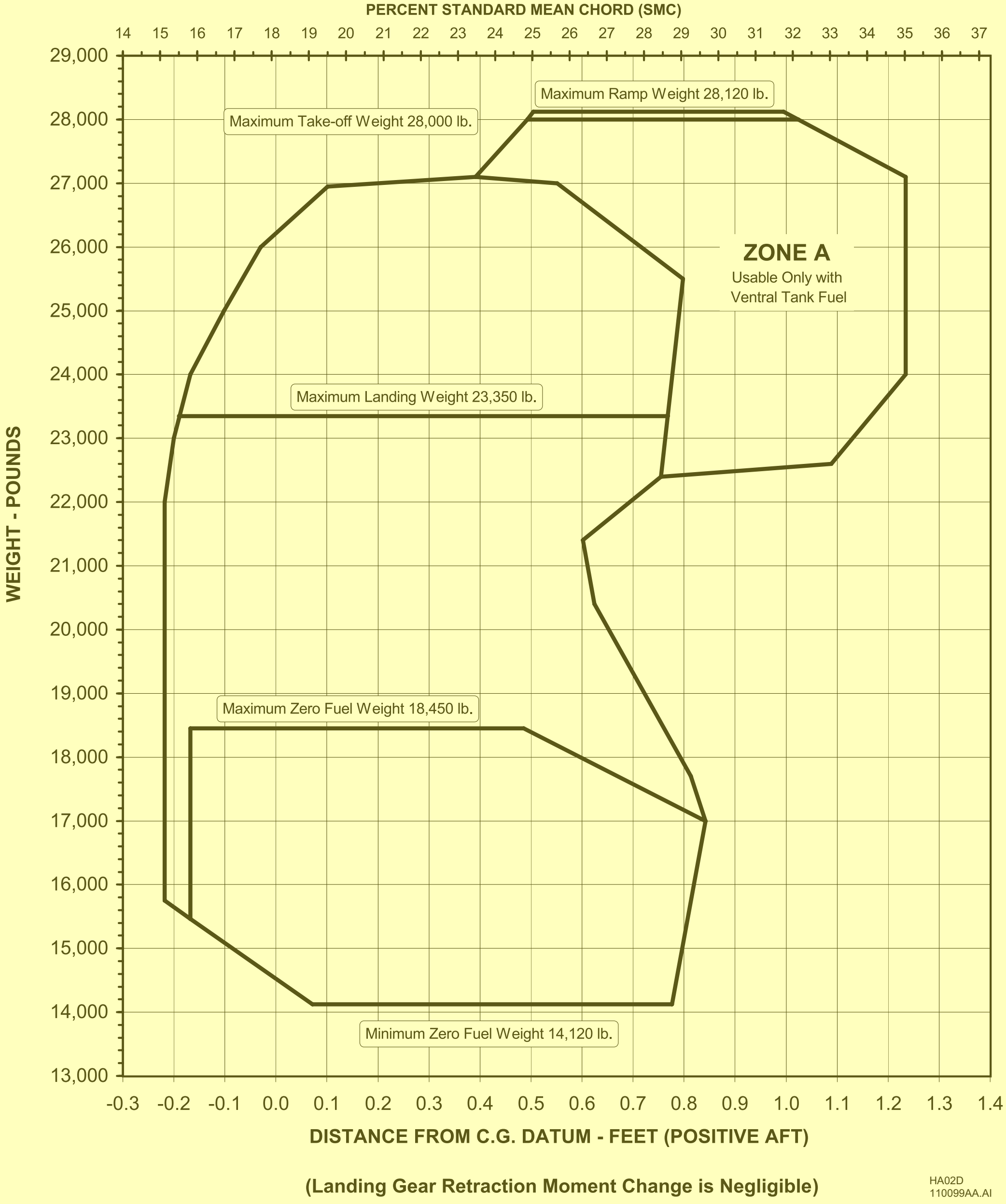
P/N 140-590032-0005TC26

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005.
AIRPLANE EFFECTIVITY:	All Hawker 800XP Pro Line 21 airplanes.
DESCRIPTION OF CHANGE:	Revised the Loading and Flight Envelopes to correspond with the definition listed in the Type Certificate Data Sheet.
FILING INSTRUCTIONS:	Insert this Temporary Change Page 1 of 6 into the Hawker 800XP Pro Line 21 FAA Approved Airplane Flight Manual Section 2 - LIMITATIONS to face Page 6. Insert Page 4 of 6 into Section 6 - WEIGHT & BALANCE to face Page 9. Insert Page 5 of 6 into Section 6 - WEIGHT & BALANCE to face Page 10.

SECTION 6 - WEIGHT & BALANCE

WEIGHT and CENTER of GRAVITY (CG) LIMITATIONS/DATA

LOADING and FLIGHT ENVELOPE - POUNDS/FEET



(Landing Gear Retraction Moment Change is Negligible)

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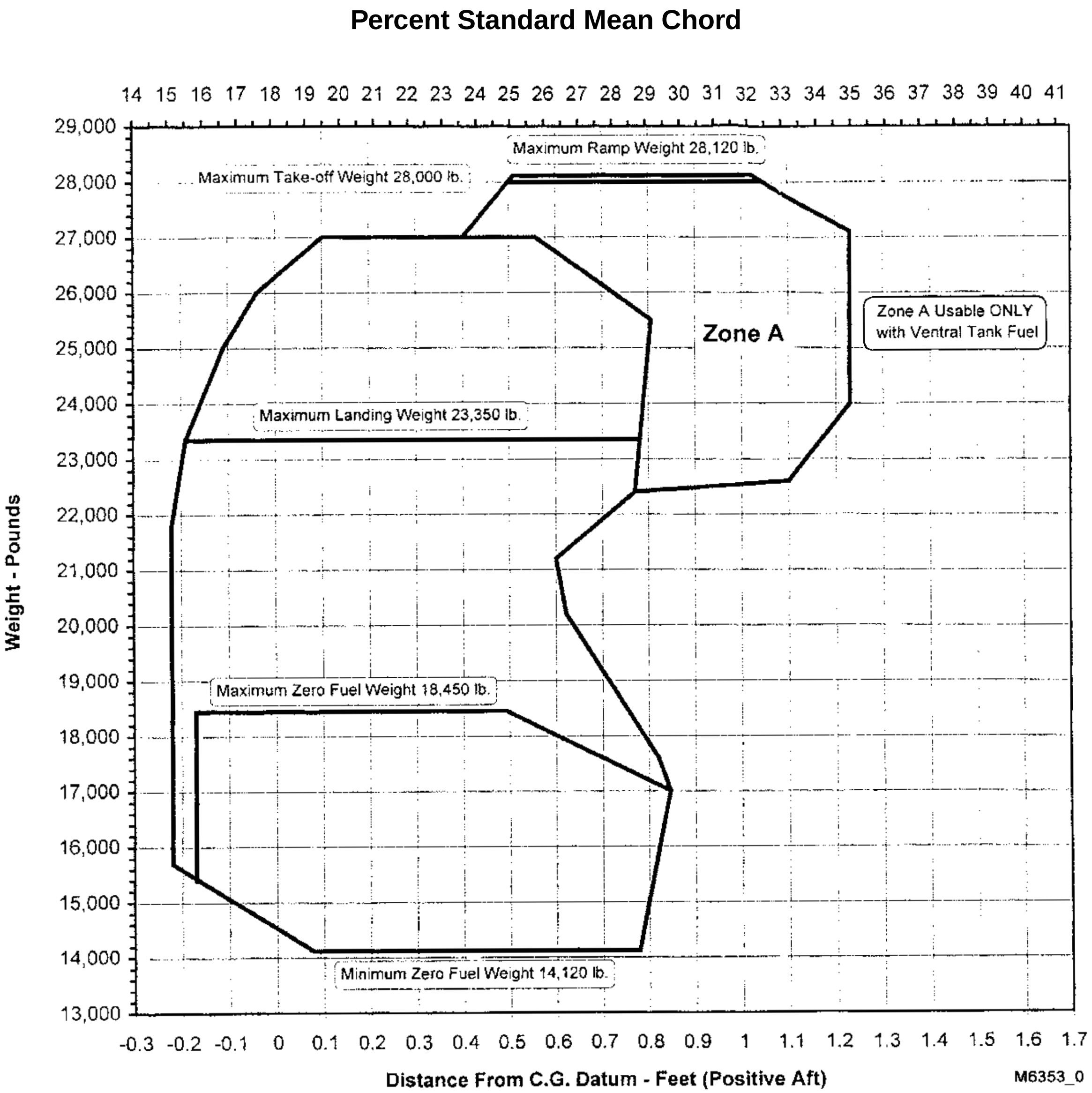
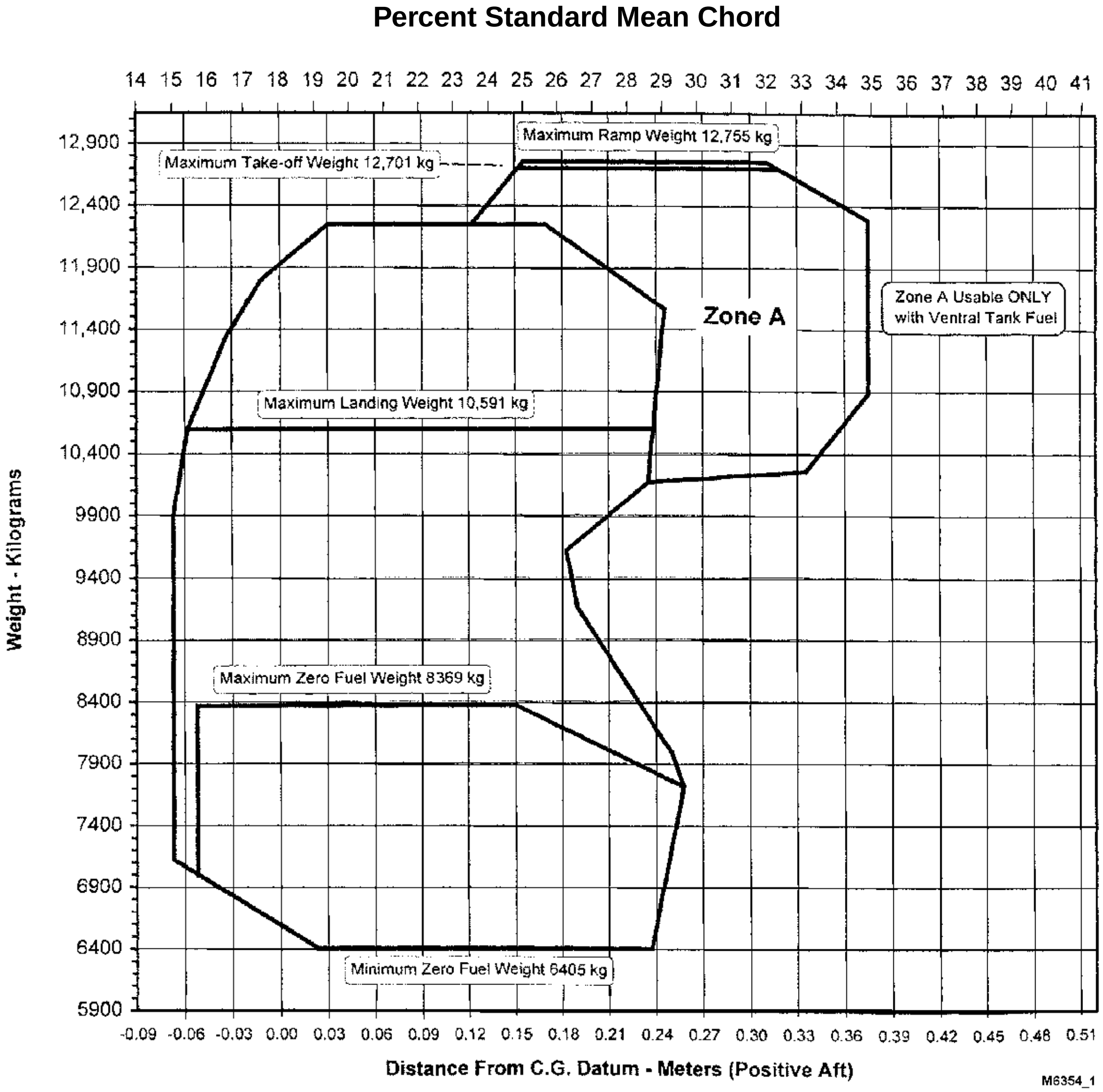
LOADING and FLIGHT ENVELOPE - POUNDS/FEET



(Landing Gear Retraction Moment Change is Negligible)

Figure 6.1

LOADING and FLIGHT ENVELOPE - KILOGRAMS/METERS



(Landing Gear Retraction Moment Change is Negligible)

Figure 6.2

TEMPORARY CHANGE

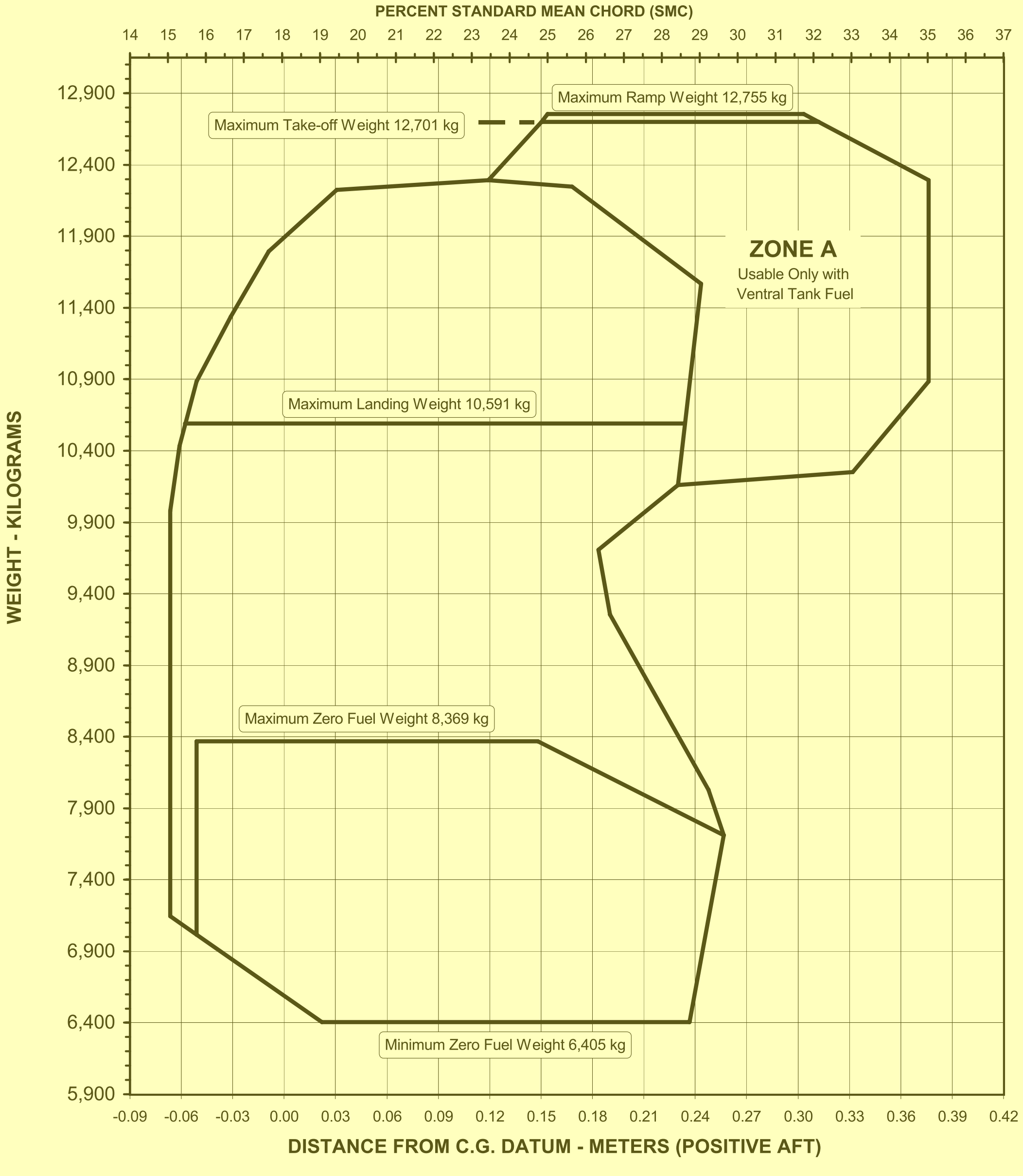
P/N 140-590032-0005TC26

PUBLICATION AFFECTED:	FAA Approved Airplane Flight Manual, P/N 140-590032-0005.
AIRPLANE EFFECTIVITY:	All Hawker 800XP Pro Line 21 airplanes.
DESCRIPTION OF CHANGE:	Revised the Loading and Flight Envelopes to correspond with the definition listed in the Type Certificate Data Sheet.
FILING INSTRUCTIONS:	Insert this Temporary Change Page 1 of 6 into the Hawker 800XP Pro Line 21 FAA Approved Airplane Flight Manual Section 2 - LIMITATIONS to face Page 6. Insert Page 4 of 6 into Section 6 - WEIGHT & BALANCE to face Page 9. Insert Page 5 of 6 into Section 6 - WEIGHT & BALANCE to face Page 10.

SECTION 6 - WEIGHT & BALANCE

WEIGHT and CENTER of GRAVITY (CG) LIMITATIONS/DATA

LOADING and FLIGHT ENVELOPE - KILOGRAMS/METERS



(Landing Gear Retraction Moment Change is Negligible)

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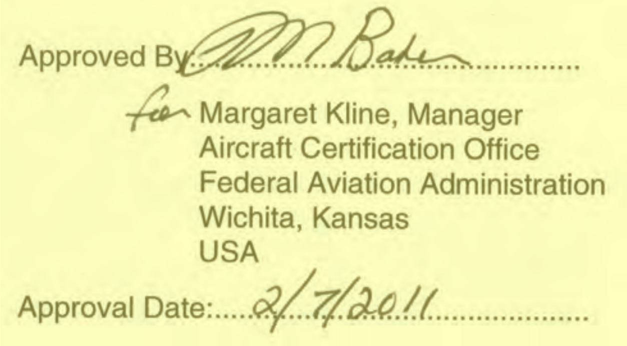
P/N 140-590032-0005TC26

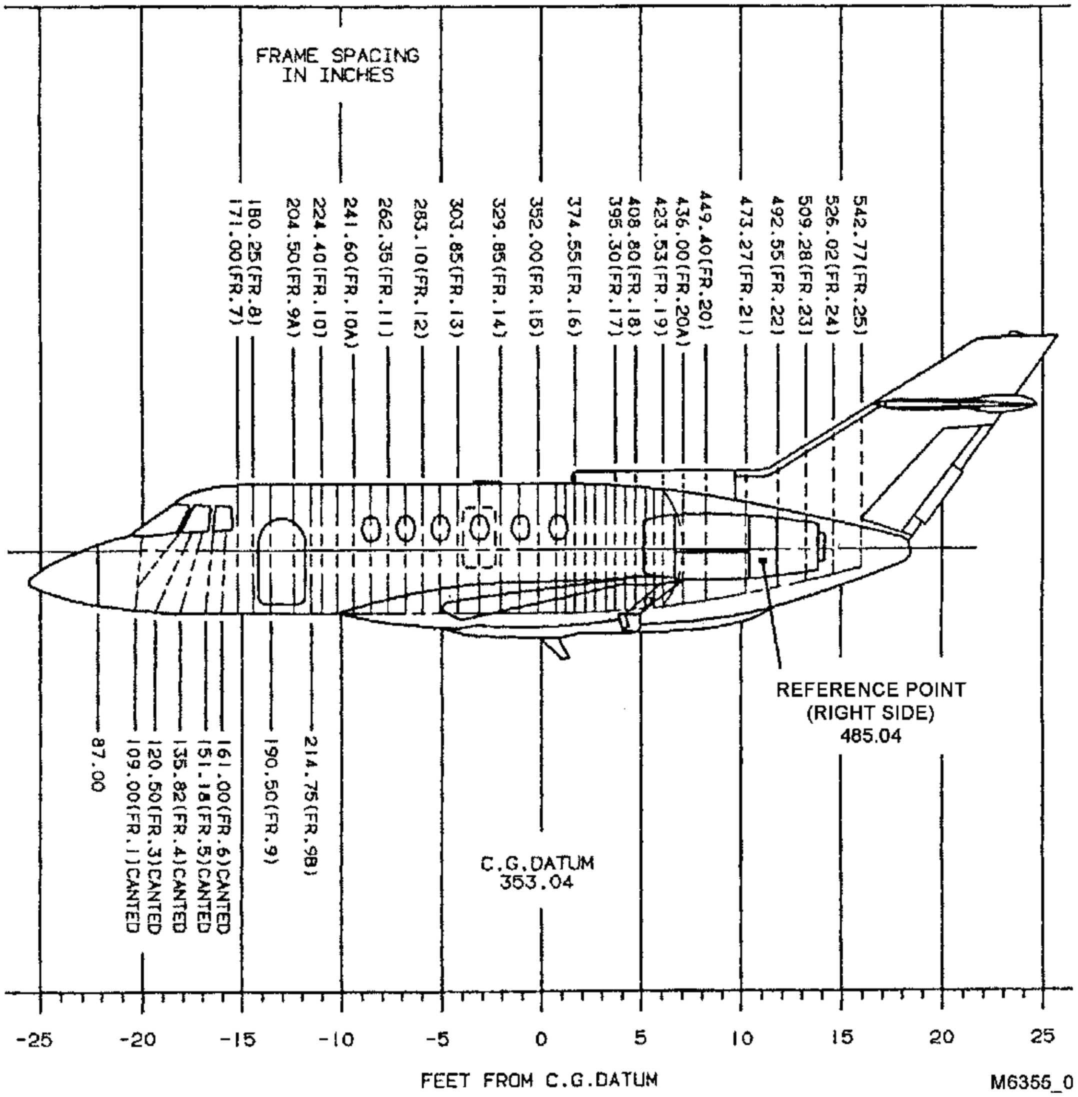


Approved By: M.M. Baker

for Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 2/7/2011

FUSELAGE STATION LOCATING DIAGRAM



NOTE: Refer to conversion factors for metric equivalent.

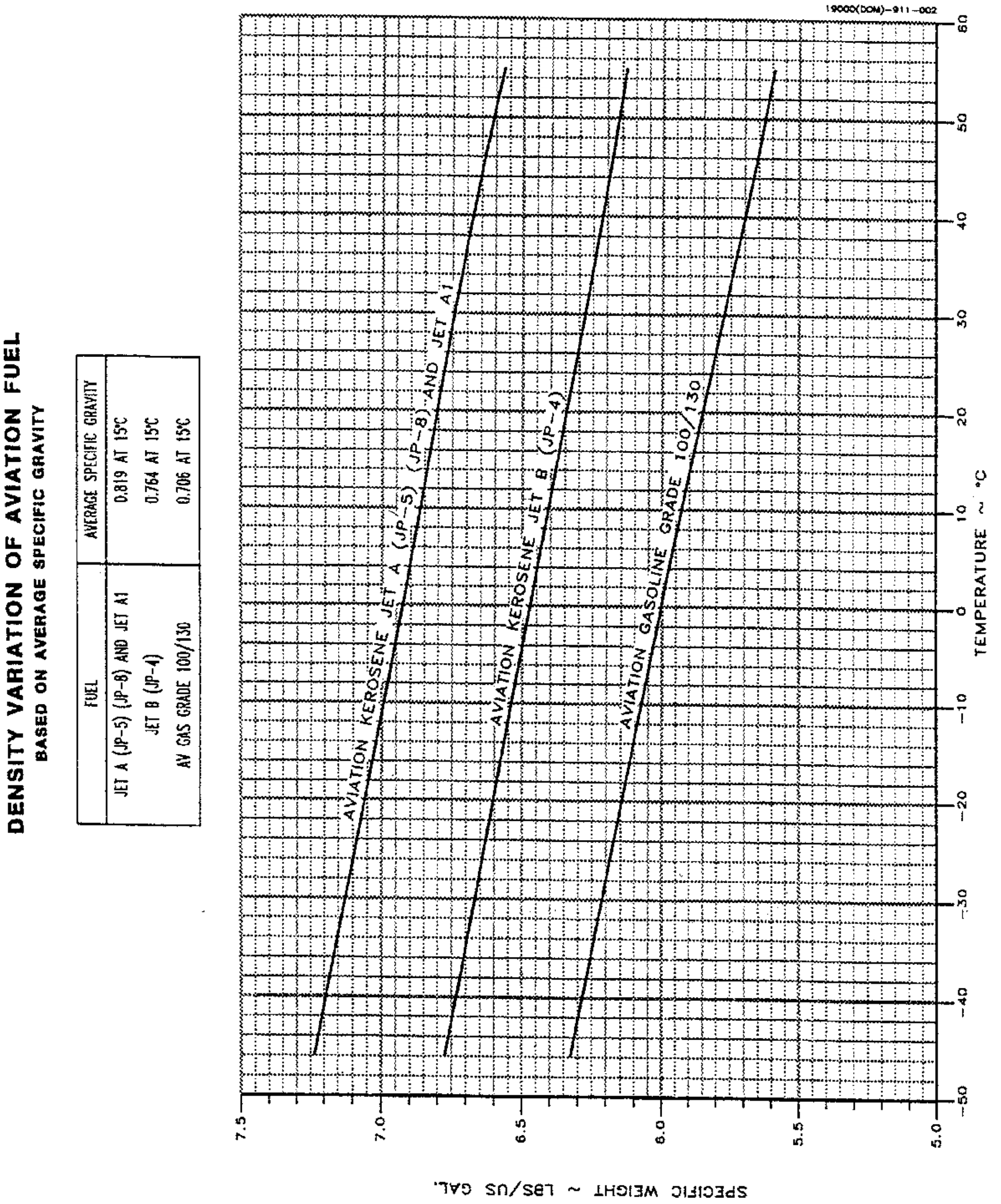
Figure 6.3

USEFUL LOAD DATA

Occupants	**Arm - ft (m)**
Crew	-17.05 (-5.197)
Jump Seat Observer	-14.00 (-4.267)

NOTE: See Part 2 for airplane serial number specific payload data.

DENSITY VARIATION of AVIATION FUEL - POUNDS/U.S. GALLONS



DENSITY VARIATION OF AVIATION FUEL

BASED ON AVERAGE SPECIFIC GRAVITY

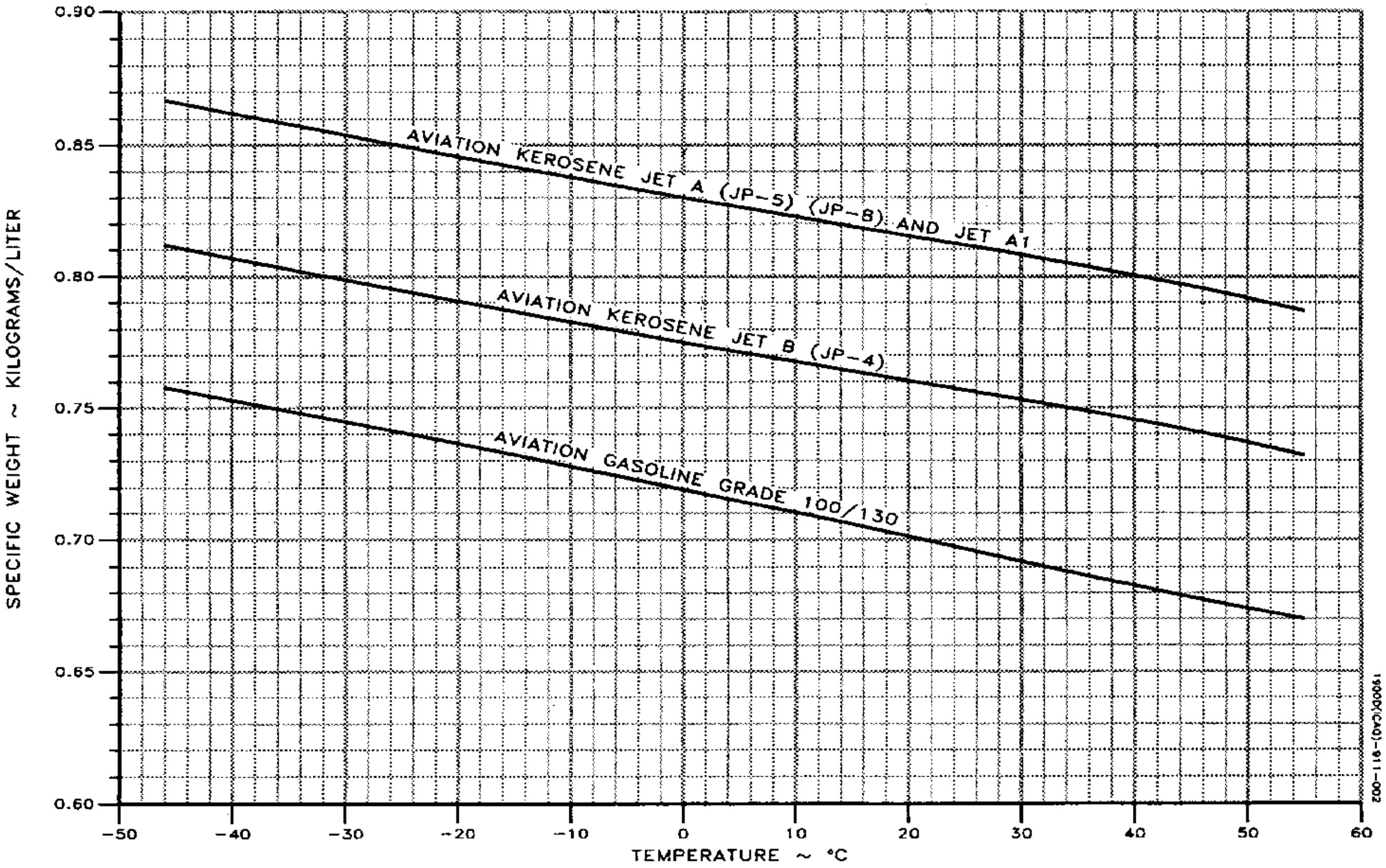
FUEL	AVERAGE SPECIFIC GRAVITY
JET A (JP-5) (JP-8) AND JET A1	0.819 AT 15°C
JET B (JP-4)	0.764 AT 15°C
AV GAS GRADE 100/130	0.706 AT 15°C

DENSITY VARIATION of AVIATION FUEL - KILOGRAMS/LITERS

DENSITY VARIATION OF AVIATION FUEL

BASED ON AVERAGE SPECIFIC GRAVITY

FUEL	AVERAGE SPECIFIC GRAVITY
JET A (JP-5) (JP-8) AND JET A1	0.819 AT 15°C
JET B (JP-4)	0.764 AT 15°C
AV GAS GRADE 100/130	0.706 AT 15°C



USABLE FUEL - POUNDS/U.S. GALLONS

USEFUL LOAD DATA USABLE FUEL WING TANKS

Table 1 - Pounds/US Gallons

		6.40 lb/gal		6.66 lb/gal		6.90 lb/gal	
Note	Gal.	Weight lb	Moment lb-ft	Weight lb	Moment lb-ft	Weight lb	Moment lb-ft
	40	256	0	266	0	276	0
	80	512	0	533	0	552	0
	120	768	-188	799	-196	828	-203
	160	1024	-460	1066	-479	1104	-496
	200	1280	-651	1332	-677	1380	-702
	240	1536	-872	1598	-907	1656	-940
	280	1792	-1022	1865	-1063	1932	-1102
	320	2048	-1144	2131	-1190	2208	-1233
	360	2304	-1256	2398	-1307	2484	-1354
	400	2560	-1343	2664	-1397	2760	-1448
	440	2816	-1413	2930	-1471	3036	-1524
	480	3072	-1439	3197	-1497	3312	-1551
	520	3328	-1451	3463	-1510	3588	-1564
	560	3584	-1445	3730	-1503	3864	-1557
	600	3840	-1398	3996	-1455	4140	-1507
	640	4096	-1305	4262	-1358	4416	-1407
	680	4352	-1191	4529	-1239	4692	-1284
	720	4608	-1067	4795	-1110	4968	-1150
	760	4864	-921	5062	-959	5244	-993
	800	5120	-735	5328	-764	5520	-792
	840	5376	-524	5594	-545	5796	-564
	880	5632	-283	5861	-295	6072	-306
	920	5888	-3	6127	-3	6348	-3
	960	6144	320	6394	333	6624	345
	1000	6400	694	6660	722	6900	748
	1040	6656	1148	6926	1195	7176	1238
	1080	6912	1694	7193	1763	7452	1827

		6.40 lb/gal		6.66 lb/gal		6.90 lb/gal	
Note	Gal.	Weight lb	Moment lb-ft	Weight lb	Moment lb-ft	Weight lb	Moment lb-ft
	1120	7168	2315	7459	2409	7728	2496
	1160	7424	2957	7726	3077	8004	3188
	1200	7680	3732	7992	3883	8280	4023
	1240	7936	4807	8258	5002	8556	5183
Note 1	1263	8083	5513	8412	5737	8715	5944
Note 2	1268	8115	5669	8445	5899	8749	6112

VENTRAL TANK - ADD VALUES TO WING FUEL VALUES WHEN REQUIRED

Note 3	224.6	1437	12,021	1496	12,514	1550	12,966
Note 4	228.2	1460	12,213	1520	12,715	1575	13,175
Note 5	229.4	1468	12,280	1528	12,782	1583	13,242
Note 6	233.0	1491	12,472	1552	12,982	1608	13,451

Table 1 - NOTES:

Full Wing Fuel Notes:

1. *Pressure Filling.*
2. *Gravity Filling.*

Full Ventral Fuel Notes:

3. *Pressure Filling with External Toilet Servicing.*
4. *Gravity Filling with External Toilet Servicing.*
5. *Pressure Filling without External Toilet Servicing.*
6. *Gravity Filling without External Toilet Servicing.*

NOTE: Minimum Wing Fuel Load - Recommended 960 lb (435 kg)

USABLE FUEL - KILOGRAMS/LITERS

USEFUL LOAD DATA USABLE FUEL WING TANKS

Table 2 - Kilograms/Liters

		0.77 kg/L		0.80 kg/L		0.83 kg/L	
Note	Liter	Weight kg	Moment kg-m	Weight kg	Moment kg-m	Weight kg	Moment kg-m
	50	39	0.0	40	0.0	42	0.0
	200	154	0.0	160	0.0	166	0.0
	350	270	0.0	280	0.0	291	0.0
	500	385	-40.9	400	-42.5	415	-44.1
	650	501	-71.3	520	-74.0	540	-76.8
	800	616	-98.6	640	-102.5	664	-106.3
	950	732	-128.8	760	-133.7	789	-138.8
	1100	847	-146.5	880	-152.3	913	-158.0
	1250	963	-162.9	1000	-169.2	1038	-175.6
	1400	1078	-178.0	1120	-184.9	1162	-191.8
	1550	1194	-188.9	1240	-196.2	1287	-203.7
	1700	1309	-197.7	1360	-205.4	1411	-213.1
	1850	1425	-200.1	1480	-207.8	1536	-215.7
	2000	1540	-201.5	1600	-209.4	1660	-217.2
	2150	1656	-199.5	1720	-207.2	1785	-215.1
	2300	1771	-191.8	1840	-199.3	1909	-206.8
	2450	1887	-178.5	1960	-185.4	2034	-192.4
	2600	2002	-162.5	2080	-168.8	2158	-175.2
	2750	2118	-145.0	2200	-150.6	2283	-156.3
	2900	2233	-124.2	2320	-129.0	2407	-133.9
	3050	2349	-97.9	2440	-101.7	2532	-105.6
	3200	2464	-68.4	2560	-71.1	2656	-73.8
	3350	2580	-34.8	2680	-36.2	2781	-37.5
	3500	2695	4.6	2800	4.8	2905	5.0
	3650	2811	49.4	2920	51.4	3030	53.3
	3800	2926	102.4	3040	106.3	3154	110.3
	3950	3042	165.3	3160	171.7	3279	178.2

Note	Liter	0.77 kg/L Weight kg	0.77 kg/L Moment kg-m	0.80 kg/L Weight kg	0.80 kg/L Moment kg-m	0.83 kg/L Weight kg	0.83 kg/L Moment kg-m
	4100	3157	241.9	3280	251.4	3403	260.8
	4250	3273	327.8	3400	340.5	3528	353.3
	4400	3388	416.2	3520	432.4	3652	448.7
	4550	3504	523.9	3640	544.3	3777	564.7
	4700	3619	674.6	3760	700.8	3901	727.1
Note 1	4780	3681	764.7	3824	794.4	3967	824.1
Note 2	4802	3698	790.0	3842	820.7	3986	851.5
VENTRAL TANK - ADD VALUES TO WING FUEL VALUES WHEN REQUIRED							
Note 3	850	655	1670	680	1734	706	1800
Note 4	864	665	1696	691	1762	717	1828
Note 5	868	668	1703	694	1770	720	1836
Note 6	882	679	1731	706	1800	732	1867

Table 2 - NOTES:

Full Wing Fuel Notes:

1. *Pressure Filling.*
2. *Gravity Filling.*

Full Ventral Fuel Notes:

3. *Pressure Filling with External Toilet Servicing.*
4. *Gravity Filling with External Toilet Servicing.*
5. *Pressure Filling without External Toilet Servicing.*
6. *Gravity Filling without External Toilet Servicing.*

NOTE: Minimum Wing Fuel Load - Recommended 960 lb (435 kg)

UNUSABLE FUEL

	Weight lb (kg)	Arm ft (m)	Moment lb-ft (kg-m)
Drainable (See NOTE: below)			
With ventral tank installed	59 (26.76)	N/A	-32 (-4.4)
Without ventral tank installed	54 (24.49)	N/A	-63 (-8.7)

Trapped			
With or without ventral tank installed	22 (9.98)	-1.30 (-0.396)	-29 (-4.0)

Total			
With ventral tank installed	81 (36.74)	-0.75 (-0.229)	-61 (-8.4)
Without ventral tank installed	76 (34.47)	-1.21 (-0.369)	-92 (-12.7)

NOTE: To be added to the fuel drained airplane "Total As Weighed" values, to determine Basic Empty Weight.

MISCELLANEOUS FLUIDS and OXYGEN

	Capacity gal (L)	Weight lb (kg)	Arm ft (m)	Moment lb-ft (kg-m)
Hydraulic Fluid				
Main System	2.40 (9.08)	17.00 (7.71)	11.20 (3.41)	190 (26.3)
Auxiliary System	0.72 (2.73)	5.12 (2.32)	-20.75 (-6.32)	-106 (-14.7)

Airframe Deicing Fluid	10.00 (37.85)	84.00 (38.10)	-15.44 (-4.71)	-1297 (-179.3)

Engine Oil	3.30 (12.49)	24.80 (11.25)	7.57 (2.31)	188 (26.0)

Oxygen Charge	N/A (1500.00)	4.82 (2.19)	15.08 (4.60)	73 (10.0)

GENERAL WEIGHING INSTRUCTIONS

Periodic weighing of the airplane may be required to keep the Basic Empty Weight current, with the frequency of weighing determined by the operator. All changes to the airplane affecting weight and/or balance are the responsibility of the operator.

Airplane weighing should be done in an enclosed, draft free hangar. The airplane exterior should be clean and dry. All equipment that is a part of the Basic Empty Weight should be installed in the proper locations. All loose equipment such as protective covers, tools, galley contents, etc. should be removed. Engine oil, hydraulic fluid, de-icing fluid, toilet precharge and oxygen should be full. Galley and lavatory liquids should be drained. Fuel should be drained and the drain ports and the water drains sumped.

Ensure that the weighing equipment certification is current and that the scales read "0" with no load applied.

The airplane may be weighed on jack points, wheels or wheel change jacks. For each method, the airplane must be in a level attitude. This is determined by placing a leveling bar, RAC Part No. 25-Y-23A or equivalent, and an inclinometer or spirit level on the leveling bolts just inboard of the lower seat track at FS 309.35 and FS 371.55. Be sure to remove the leveling equipment before recording the scale readings.

Refer to Figures 6.7 and 6.8, Weighing Points and the Basic Empty Weight & Balance Form.

Jack Point Weighing

Place the jacks and weighing units under the two main jack points at 4.12 ft (1.256 m) forward (-) of the cg datum, and the tail jack point at 15.65 ft (4.770 m) aft (+) of the cg datum. Operate the jacks in unison to keep the airplane level as it is raised and until the wheels just clear the floor.

Ensure that the airplane is level and record the scale readings. If the jacks are placed on platform scales, be sure to remove the weight of the jacks from the scale readings.

Operate the jacks in unison to keep the airplane level as it is lowered. Remove the jacks from the platform scales if used, and ensure that the scale readings have returned to "0".

Wheel Weighing

Place the airplane on the scales in a level attitude and record the scale readings.

The wheel locations (axle centerlines) must be determined by measurement with the airplane in a level attitude. Drop a plumb bob from the fuselage reference point located below the right engine pylon at 11.00 ft (3.353 m) aft (+) of the cg datum. Measure from this point to a string stretched between the Left and Right inboard main wheel axle centerlines (Figure 6.8, Dimension B) and then from the string to the nose wheel axle centerline Left and Right sides - use the average of the two sides (Figure 6.8, Dimension A). All measurements must be taken with the tape level and parallel to the fuselage centerline.

The inboard main wheel axle centerline is 0.058 ft (0.018 m) aft of the main gear bogie centerline, which is the true weight reaction point. Therefore, 0.058 ft (0.018 m) must be added to Dimension B (Figure 6.8) and subtracted from the Dimension A (Figure 6.8) average measurement. The main wheels should be approximately at 2.8 ft (0.85 m) and the nose wheels at -18.4 ft (-5.61 m). Remove the airplane from the scales and ensure that the scale readings have returned to "0".

Wheel Change Jack Weighing

Place the airplane on the scales and place the jacks under the jacking points. Operate the jack(s) to level the airplane and record the scale readings. Be sure to subtract the weight of the jacks from the scale readings.

Locate the scale load points as described in the Wheel Weighing method that includes the correction for the main gear bogie centerline. A correction for the jack locations must now be made. The nose wheel jack point is 0.35 ft (0.107 m) forward (-) of the nose wheel axle centerline and the main wheel jack point is 0.28 ft (0.085 m) forward (-) of the main gear bogie centerline. The main wheel jack point should be approximately at 2.5 ft (0.76 m) and the nose wheel at -18.7 ft (-5.70 m).

Remove the airplane and jacks from the scales and ensure that the scale readings have returned to "0".

AIRPLANE WEIGHING and REACTION POINTS

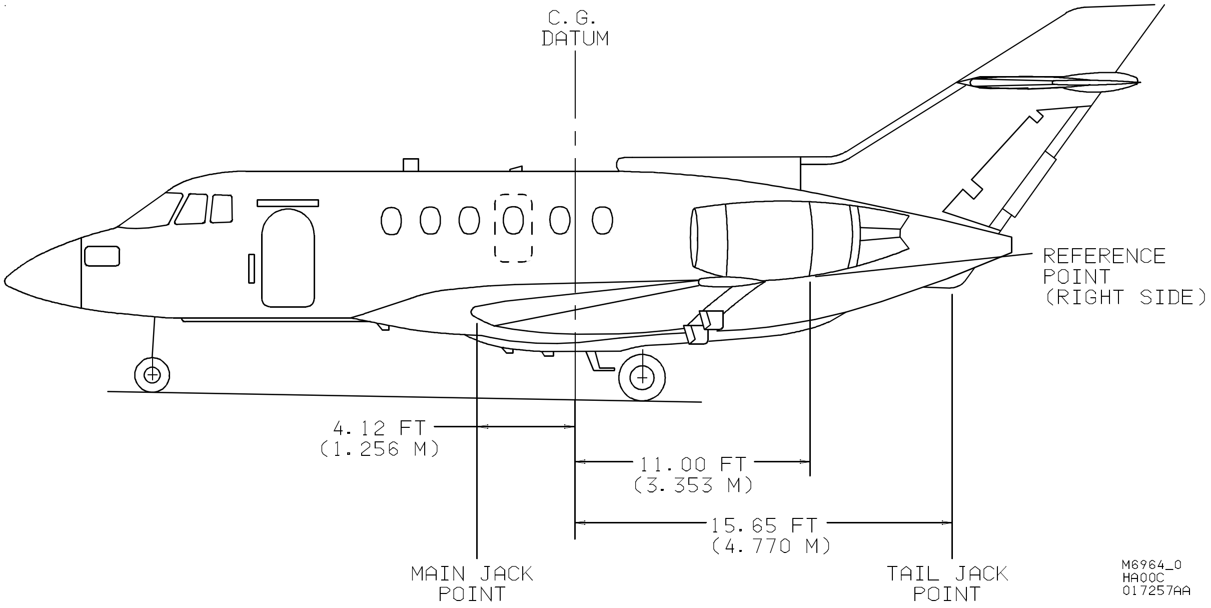


Figure 6.7 JACK POINT WEIGHING

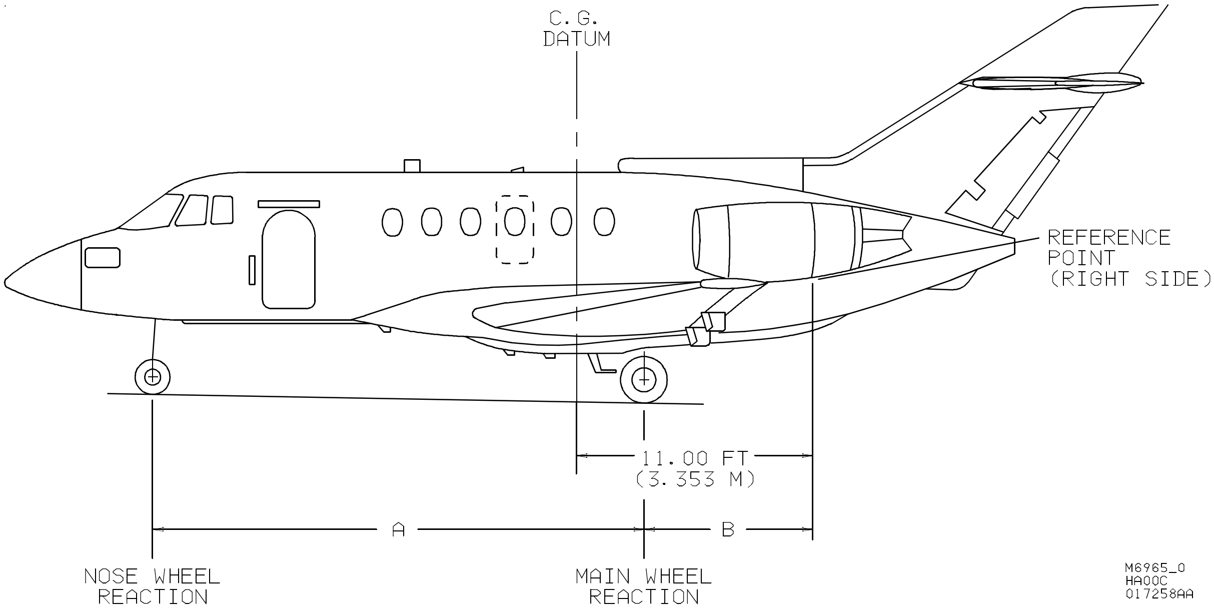


Figure 6.8 WHEEL WEIGHING

Model 800XP Basic Empty Weight & Balance Form

Facility : ______________________ Airplane Serial No: ____________

Scales : ______________________ Date : ______________________

Wheel Reaction Measurements (as applicable)

	Actual ft (m) *	Wheels C/L Correction ft (m) *	Corrected ft (m) *
Inboard Main Wheel C/L to Fuselage Reference Point	______	0.058 (0.018)	__________
Left Nose Wheel C/L to Inboard Main Wheel C/L	______		
Right Nose Wheel C/L to Inboard Main Wheel C/L	______		
Average Nose Wheel C/L to Inboard Main Wheel C/L	______	-0.058 (-0.018)	__________

Wheel Change Jack Correction Applied To Wheel Centerline Locations: Nose = -.35 (-0.107), Mains = -.28 (-0.085)

Fuselage Reference Point from C.G. Datum (Reference): 11.00 (3.353)

Jack Point Locations from C.G. Datum (reference): Forward: -4.12 (-1.256)
Aft: 15.65 (4.770)

REACTIONS Wheels or Jack Points*	Scale Reading	Drift or Tare	Net Weight lb (kg)*	Arm ft (m)*	Moment lb-ft (kg-m)*
Left Main					
Right Main					
Subtotal					
Nose or Tail *					
TOTAL AS WEIGHED					
Additions and Subtractions to the As Weighed Condition					
Add: Drainable Unusable Fuel					
BASIC EMPTY WEIGHT					

* Cross out the non-applicable word, abbreviation and/or value.

Prepared By : ______________________ Title : ______________________

EQUIPMENT LIST

Item	QTY	Total Weight lb (kg)	Arm ft (m)	Moment lb-ft (kg-m)
Engines - AlliedSignal TFE 731-5BR-1H	2	1832.0 (830.99)	9.30 (2.83)	17,038 (2355.6)
Thrust Reversers	2	220.0 (99.79)	11.86 (3.61)	2609 (360.7)
Hydraulic System				
Steering Jack	1	5.3 (2.40)	-18.50 (-5.64)	-98 (-13.6)
Nose Landing Gear Jack	1	5.4 (2.45)	-18.20 (-5.55)	-98 (-13.6)
Emergency Hand Pump	1	2.0 (0.91)	-17.50 (-5.33)	-35 (-4.8)
Main Landing Gear Jack	2	14.4 (6.53)	3.00 (0.91)	43 (6.0)
Airbrake Jack	2	8.0 (3.63)	4.00 (1.22)	32 (4.4)
Flap Jack	2	22.00 (9.98)	4.20 (1.28)	92 (12.8)
Engine Pumps	2	9.4 (4.26)	8.03 (2.45)	75 (10.4)
Hand Pump	1	2.0 (0.91)	11.00 (3.35)	22 (3.0)
Reservoir (Dry)	1	4.0 (1.81)	11.10 (3.38)	44 (6.1)
Electrical System				
Starter-Generator	2	75.5 (34.25)	7.65 (2.33)	578 (79.9)
Alternator	2	40.0 (18.14)	7.82 (2.38)	313 (43.2)
Batteries	2	106.0 (48.08)	12.04 (3.67)	1276 (176.5)
Fuel Computer	2	22.6 (10.25)	13.75 (4.19)	311 (43.0)
Environmental System				
Cabin Air Outlet Valve Controller	1	3.1 (1.41)	-18.34 (-5.59)	-57 (-7.9)
Safety Valve	1	3.1 (1.41)	6.25 (1.91)	19 (2.7)
Venturi and Fan	1	2.3 (1.04)	6.26 (1.91)	14 (2.0)
Cold Air Unit	1	37.4 (16.96)	7.50 (2.29)	281 (38.8)
Water Separator	1	5.0 (2.27)	7.50 (2.29)	38 (5.2)
Ram Air Shut Off Valve	1	2.5 (1.13)	7.50 (2.29)	19 (2.6)
Refrigeration Unit By-Pass Valve	1	3.5 (1.59)	8.30 (2.53)	29 (4.0)
Pressure Regulator Valve	1	5.5 (2.49)	8.50 (2.59)	47 (6.5)
Bleed Air Shut Off Valve	2	5.0 (2.27)	8.70 (2.65)	44 (6.0)

Item	QTY	Total Weight lb (kg)	Arm ft (m)	Moment lb-ft (kg-m)
De-icing System				
TKS Reservoir (Dry)	1	16.2 (7.35)	-15.44 (-4.71)	-250 (-34.6)
TKS Pump	1	5.3 (2.40)	-15.35 (-4.68)	-81 (-11.2)
TKS Filter	1	1.7 (0.77)	-10.56 (-3.22)	-18 (-2.5)
Safety Equipment				
Crew Life Jackets	2	3.0 (1.36)	-16.55 (-5.04)	-50 (-6.9)
Crew Masks	2	3.0 (1.36)	-16.55 (-5.04)	-50 (-6.9)
Crew Smoke Goggles	2	0.6 (0.27)	-16.50 (-5.03)	-10 (-1.4)
Portable Cabin Fire Extinguisher	1	5.5 (2.49)	-15.30 (-4.66)	-84 (-11.6)
Crash Axe	1	2.6 (1.18)	-15.25 (-4.65)	-40 (-5.5)
Flashlight	1	1.3 (0.59)	-15.25 (-4.65)	-20 (-2.7)
First Aid Kit	1	5.5 (2.49)	-14.50 (-4.42)	-80 (-11.0)
Engine Fire Extinguisher Bottle	2	15.5 (7.03)	12.32 (3.76)	191 (26.4)
Oxygen Bottles - 750 liters each	2	30.0 (13.61)	15.08 (4.60)	452 (62.5)
Ground Equipment - Stowed				
Locking Pins, etc.		3.0 (1.36)	-12.96 (-3.95)	-39 (-5.4)
Engine Inlet and Outlet Covers		7.4 (3.36)	8.91 (2.72)	66 (9.1)
Collins Pro Line 21 Avionics				
Air Data System				
ADC-3000 Air Data Computer	2	4.2 (1.91)	-15.79 (-4.81)	-66 (-9.2)
Attitude Heading System				
AHC-3000 Attitude/Heading Computer #1	1	4.0 (1.81)	-6.67 (-2.03)	-27 (-3.7)
AHC-3000 Attitude/Heading Computer #2	1	4.0 (1.81)	-5.03 (-1.53)	-20 (-2.8)
ECU-3000 External Compensation Unit #1	1	0.4 (0.18)	-6.08 (-1.85)	-2 (-0.3)
ECU-3000 External Compensation Unit #2	1	0.4 (0.18)	-5.62 (-1.71)	-2 (-0.3)
Automatic Flight Guidance System				
FGP-3002 Flight Guidance Panel	1	4.7 (2.13)	-18.75 (-5.72)	-88 (-12.2)

Item	QTY	Total Weight lb (kg)	Arm ft (m)	Moment lb-ft (kg-m)
Electronic Flight Instrument System				
AFD-3010 Adaptive Flight Display	4	52.0 (23.59)	-19.00 (-5.79)	-988 (-136.6)
DCP-3020 Display Control Panel	2	5.0 (2.27)	-18.75 (-5.72)	-94 (-13.0)
Data Acquisition System				
DCU-3001 Data Concentrator Unit	2	5.0 (2.27)	-13.05 (-3.98)	-65 (-9.0)
DCU-3001 Data Concentrator Unit	2	5.0 (2.27)	-12.12 (-3.69)	-61 (-8.4)
Integrated Avionics Processor System				
ICC-3000 Integrated Card Cage	1	8.4 (3.81)	-21.31 (-6.50)	-179 (-24.7)
MDC-3000 Maintenance Diagnostic Computer Module	1	0.9 (0.41)	-21.31 (-6.50)	-19 (-2.7)
CSU-3100 Ctl Strapping Unit Module	2	1.6 (0.73)	-21.31 (-6.50)	-34 (-4.7)
IEC-3001 IAPS Envir Ctl Module	1	2.8 (1.27)	-21.31 (-6.50)	-60 (-8.2)
IOC-3100 Input-Output Cnctr Module	2	1.6 (0.73)	-21.31 (-6.50)	-34 (-4.7)
PWR-3000 Power Supply Module	2	2.6 (1.18)	-21.31 (-6.50)	-55 (-7.7)
FMC-6000 Flight Management Computer Module	2	3.8 (1.72)	-21.31 (-6.50)	-81 (-11.2)
OCM-3100 Option Control Module	2	1.0 (0.45)	-21.31 (-6.50)	-21 (-2.9)
FGC-3000 Flight Guidance Computer Module	2	4.6 (2.09)	-21.31 (-6.50)	-98 (-13.6)
Radio Altitude System				
ALT-4000 Radio Altimeter	1	4.7 (2.13)	-4.91 (-1.50)	-23 (-3.2)
Flight Management System				
CDU-6200 Control Display Unit	2	8.4 (3.81)	-18.59 (-5.67)	-156 (-21.6)
DBU-4100 Data Base Unit	1	2.6 (1.18)	-14.44 (-4.40)	-38 (-5.2)
GPS-4000A Global Positioning System #1	1	6.3 (2.86)	-6.87 (-2.09)	-43 (-6.0)
GPS-4000A Global Positioning System #2	1	6.3 (2.86)	-16.35 (-4.98)	-103 (-14.2)
Radio System				
CTL-23C Nav/Comm Control	1	1.2 (0.54)	-17.95 (-5.47)	-22 (-3.0)
VHF-422C VHF Transceiver	2	9.4 (4.26)	-20.60 (-6.28)	-194 (-26.8)
VIR-432 VOR/ILS Receiver	2	9.0 (4.08)	-20.60 (-6.28)	-185 (-25.6)

Item	QTY	Total Weight lb (kg)	Arm ft (m)	Moment lb-ft (kg-m)
TDR-94D Transponder	2	17.0 (7.71)	-21.02 (-6.41)	-357 (-49.4)
DME-442 Distance Measuring Equipment	2	10.6 (4.81)	-21.02 (-6.41)	-223 (-30.8)
ADF-462 ADF Receiver	1	3.9 (1.77)	-21.43 (-6.53)	-84 (-11.6)
TCAS II				
TTR-4000 TCAS TX/RX	1	17.0 (7.71)	-2.74 (-0.84)	-47 (-6.4)
EGPWS				
965-0976 Computer	1	7.0 (3.18)	-16.10 (-4.91)	-113 (-15.6)
Weather Radar				
RTA-858 Receiver/Transmitter/ Antenna	1	21.5 (9.75)	-22.92 (-6.99)	-493 (-68.1)
H.F. Communications System				
HF-9031A Receiver/Transmitter	1	18.8 (8.53)	7.52 (2.29)	141 (19.5)
HF-9041 Antenna Coupler	1	12.0 (5.44)	8.86 (2.70)	106 (14.7)
DB Systems Audio System				
Model 204 Interphone Amplifier	1	0.4 (0.18)	-14.44 (-4.40)	-6 (-0.8)
Model 240 Speaker Amplifier	1	1.4 (0.64)	-21.90 (-6.68)	-31 (-4.2)
Model 630 Tone Generator	1	0.9 (0.41)	-21.86 (-6.66)	-20 (-2.7)
Model 700 Audio Amplifier	2	3.2 (1.45)	-21.73 (-6.62)	-70 (-9.6)
Model 803-002 Audio Selector Panel	2	5.0 (2.27)	-18.27 (-5.57)	-91 (-12.6)
Universal Navigation CVR-30B Cockpit Voice Recorder				
1603-02-12	1	13.0 (5.90)	5.30 (1.62)	69 (9.5)
1634-01 Control	1	0.8 (0.36)	-17.95 (-5.47)	-14 (-2.0)
ARTEX Emergency Locator Transmitter				
453-5000 ELT	1	4.5 (2.04)	16.33 (4.98)	73 (10.2)
453-6500 ELT Nav Interface	1	2.4 (1.09)	16.33 (4.98)	39 (5.4)
Miscellaneous				
C-87705-4 Angle Of Attack Indicator	1	3.0 (1.36)	-18.92 (-5.77)	-57 (-7.8)
51010-1113 Triple Indicator	1	2.4 (1.09)	-18.92 (-5.77)	-45 (-6.3)
39213-00-01 Secondary Flight Disp.	1	4.0 (1.81)	-19.17 (-5.84)	-77 (-10.6)
1200008-000 Selcal	1	2.9 (1.32)	1.02 (0.31)	3 (0.4)

Item	QTY	Total Weight lb (kg)	Arm ft (m)	Moment lb-ft (kg-m)
Miscellaneous (Cont.)				
XL245-C Emergency Battery	1	12.0 (5.44)	3.80 (1.16)	46 (6.3)
XL245-C Emergency Battery	3	36.0 (16.33)	10.78 (3.29)	388 (53.7)
27101-01-01 ESIS Air Data Unit	1	1.4 (0.64)	-14.25 (-4.34)	-20 (-2.8)
SPS-1607 Inverter	2	49.0 (22.23)	8.95 (2.73)	439 (60.6)

PART 2 - POST CERTIFICATED

WEIGHT and BALANCE RECORD

Continuous History of Changes in Structure or Equipment Affecting Weight and Balance

SERIAL NUMBER: ______________________________ PAGE NUMBER: ________________________

Date	Item		Description of Item or Change	Weight Change Added (+) or Removed(-)			Running Basic Empty Weight	
	In	Out		Weight lb (kg)	Arm ft (m)	Moment lb-in (kg-m)	Wt lb (kg)	Moment lb-in (kg-m)

WEIGHT and BALANCE RECORD

Continuous History of Changes in Structure or Equipment Affecting Weight and Balance

SERIAL NUMBER: ______________________________ PAGE NUMBER: ________________________

Date	Item		Description of Item or Change	Weight Change Added (+) or Removed(-)			Running Basic Empty Weight	
	In	Out		Weight lb (kg)	Arm ft (m)	Moment lb-in (kg-m)	Wt lb (kg)	Moment lb-in (kg-m)

Weight and Balance Report

This page will be replaced by the multi-page Weight and Balance Report, which is prepared on an individual airplane basis.

SECTION - 7

SUPPLEMENTS

When a new airplane is delivered from the factory, the Airplane Flight Manual delivered with it contains either a Supplemental Type Certificate (STC) supplement or a Raytheon Aircraft Company Type Certificate (TC) supplement for every installed item not included in the main manual.

If a new Airplane Flight Manual is obtained at a later date, it is the responsibility of the owner/ operator to make sure all required Airplane Flight Manual supplements (TC and STC) as well as weight and balance and other pertinent data, are transferred into the new Airplane Flight Manual.

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Raytheon Aircraft Company

Hawker 800XP

COVER LETTER
for
Operation On Wet and Contaminated Runways

AIRPLANES EQUIPPED WITH COLLINS PRO LINE 21 AVIONICS
(Serials 258541, 258556, 258567 and After)

This COVER LETTER is being provided as a brief explanation for the two packages which are enclosed. In this mailing you will find one copy each of the following items:

- Non-FAA Approved Appendix - Topic 1 (Revision 1)
- FAA Approved Airplane Flight Manual Supplement P/N 140-590032-0033 (Revision 1)

Although both the Appendix and the Supplement are being provided, **only one** is to be incorporated.

To determine which item is to be incorporated in your manual, please reference page 2 of Airplane Flight Manual Supplement P/N 140-590072-0033 (Revision 1) and follow the detailed instruction sheet enclosed in each package.

If you have any questions please call the Raytheon Aircraft Company Technical Manual Distribution Center at 1-800-796-2665 or 316-676-8238.

EXPORT STATEMENT

The export of these commodities, technology or software are subject to the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited. For guidance on export control requirements, contact the Commerce Department's Bureau of Export Administration at 202-482-4811 or at www.bxa.doc.gov.

LOG OF SUPPLEMENTS

Serials 258541, 258556, 258567 and After

FAA Approved Airplane Flight Manual
P/N 140-590032-0005
for
AIRPLANES EQUIPPED WITH COLLINS PRO LINE 21 AVIONICS

November 7, 2013

All applicable FAA approved supplements for your airplane must be in the Airplane Flight Manual on board the airplane for all flights. Non-applicable supplements may, at the discretion of the owner/operator, be removed from the AFM.

Part Number	*Subject*	*Rev No.*	*Date*
140-590032-0015	GARRETT GTCP36-150W AUXILIARY POWER UNIT All 800XP airplane Serial Nos. listed above.	2	Mar 3, 2004
140-590032-0017	OPERATION on GRAVEL and NATURAL SURFACE RUNWAYS Only applicable to 800XP airplanes equipped with Mods. 25F518A and 259071B.	0	Mar 6, 2003
140-590032-0019	FLIGHT WITH ONE FUEL PUMP INOPERATIVE All 800XP airplane Serial Nos. listed above.	1	Nov 13, 2002
140-590032-0021	CONFIGURATION DEVIATION LIST (CDL) Only applicable to 800XP airplane Serial Nos. listed above which do not have Hawker Beechcraft Corporation winglet kits 140-1701, 140-1703 or 140-1704 installed.	2	May 29, 2009
140-590032-0033	OPERATIONS ON WET or CONTAMINATED RUNWAYS FLAPS 15° and 0° Only applicable to 800XP airplanes registered in Canada and airplanes registered under the Aviation Authorities of the European Aviation Safety Agency (EASA).	1	Jun 15, 2004
140-590032-0035	AIRBRAKE BAULK LEVER INSTALLATION Dated Dec 10, 2002 **(Superseded by P/N 140-590032-0051)**	---	Deleted

Part Number	*Subject*	*Rev No.*	*Date*
140-590032-0039	AIRPLANES REGISTERED IN BRAZIL Only applicable to 800XP airplanes equipped with Collins Pro Line 21 avionics and operating on the Brazilian register.	0	Jul 21, 2008
140-590032-0043	CAT II OPERATION (CS-AWO Subpart 2) Only applicable to 800XP Pro Line 21 avionics airplanes registered in the European Union member states and other states associated with the European Aviation Safety Agency (EASA).	0	Nov 7, 2013
140-590032-0045	AIRPLANES REGISTERED IN ISRAEL Only for 800XP airplanes registered in Israel.	0	Dec 1, 2004
140-590032-0047	TURBINE VIBRATION INDICATION SYSTEM Only applicable to 800XP airplanes with Service Bulletin SB 31-3702 incorporated.	0	Dec 21, 2004
140-590032-0049	TAKE-OFF CONFIGURATION WARNING Only applicable to 800XP airplanes with Service Bulletin SB 31-3703 incorporated.	0	Dec 21, 2004
140-590032-0051	AIRBRAKE BAULK LEVER INSTALLATION Only applicable to 800XP airplanes registered in Canada and equipped with Service Bulletin SB 27-3554.	0	Feb 7, 2005
140-590032-0053	COLLINS FMS-6000 FLIGHT MANAGEMENT SYSTEM Version 3.0.3 Only applicable to 800XP airplanes equipped with Kit No. 149-3419 or airplane Serials 258717 and after equipped with Collins FMS-6000 software version 3.0.3.	3	Sep 19, 2011
140-590032-0055	AIRPLANES NOT EQUIPPED WITH A STANDBY INVERTER Only applicable to 800XP airplane Serial Nos. 258760 and after.	1	Jul 25, 2005
140-590032-0059	MODE S ENHANCED SURVEILLANCE Only applicable to 800XP Serial Nos. 258717 and after equipped with Service Bulletin SB 34-3717 and Kit No. 149-3417.	2	Aug 5, 2005
140-590032-0063	AIRPLANES EQUIPPED WITH INTEGRATED FLIGHT INFORMATION SYSTEM (IFIS-5000) and Pro Line 21 RADIOS Only applicable to 800XP Serial Nos. 258744 and after with IFIS-5000 installations.	2	Sep 19, 2011

Part Number	***Subject***	***Rev No.***	***Date***
140-590032-0067	TAKE-OFF PERFORMANCE UNBALANCED FIELD LENGTHS	0	Mar 31, 2006
140-590032-0069	AIRPLANES EQUIPPED WITH HAWKER BEECHCRAFT CORPORATION WINGLETS Only applicable to 800XP airplanes with Hawker Beechcraft Corporation winglet kits 140-1701, 140-1703 or 140-1704 installed.	2	Dec 23, 2010
140-590032-0071	CONFIGURATION DEVIATION LIST (CDL) Only applicable to 800XP airplanes with Hawker Beechcraft Corporation winglet kits 140-1701, 140-1703 or 140-1704 installed.	3	Dec 23, 2010
140-590032-0087	COLLINS FMS-6000 FLIGHT MANAGEMENT SYSTEM Version 3.3.1 Only applicable to 800XP airplanes with Service Bulletin SB 34-3836 incorporated and equipped with Collins FMS-6000 software version 3.3.1.	1	Sep 19, 2011
140-590032-0091	COLLINS GPS-4000S GLOBAL POSITIONING SYSTEM Only applicable to 800XP airplanes having complied with Service Bulletin SB 34-3860.	0	Jan 3, 2008
140-590032-0115	ROCKWELL COLLINS FMS-6000 FLIGHT MANAGEMENT SYSTEM Version 4.0 WAAS/ LPV Only applicable to Hawker 800XP Airplane Serials 258541, 258556, 258567 and After with Kit 149-3431 installed.	0	Nov 3, 2009
140-590032-0123	COCKPIT VOICE RECORDER CVR-120R Only applicable to Hawker 800XP airplanes equipped with Kit 149-3435 Cockpit Voice Recorder CVR-120R.	0	Jan 25, 2011
140-590034-0001	RVSM CAPABLE AIRPLANES Dated May 31, 2002 **(Incorporated into AFM at Revision A1)**	---	Deleted
43-8027-003	HONEYWELL DIGITAL ELECTRONIC ENGINE CONTROLS STC ST01424CH-D All 800XP airplane Serial Nos. listed at the top of Page 1 of 4.	B	May 11, 2006

NOTE: Supplements are provided in a supplement pack that includes all supplements for a particular flight manual. All applicable supplements must be inserted in the manual. Supplements not applicable to an airplane, due to airworthiness authority certification requirements or equipment configuration, may be omitted from the manual. Flight Manual Supplement Packs are available on the web at http://pubs.beechcraft.com

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0015
for
GARRETT GTCP36-150W AUXILIARY POWER UNIT

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL:

P/N 140-590032-0005

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: DMBaker...
fr Ronald K. Rathgeber, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 3/3/04...

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0015
for
GARRETT GTCP36-150W AUXILIARY POWER UNIT
LOG of REVISIONS

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
0	1-18	Original Issue	Dec 27, 2001	H. Youngdahl 12/27/01
1	1-18	Format change, addition of Pro Line 21 to all page headers. (For changes, other than page headers, see below)	Nov 13, 2002	
1	1	Revised Airplane Flight Manual applicability.		
1	3, 11, 12, 13, 14, 17 and 18	Format change, notes indented.		
1	6, 9, 11, 14,	Format change 0 °F, to 0°. F.		
1	12	Addition of MWS annunciator for APU FIRE. Removed parts (1) and (2) from note 2, and created sub-notes (a) and (b).		
1	13 and 14	Changed point size of Sub-section 4.05 - ABNORMAL PROCEDURES to 11 pts. and removed indent margin.		
1	14, 15, 16 and 18	Punctuation change, addition of (periods).		

LOG OF REVISIONS (continued)

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
2	All pages	Incorporated new company header. (Raytheon Aircraft Company)	Mar 3, 2004	
2	5 of 20	Updated Table of Contents for Figure 1 and added revision bar information.		
2	6 of 20	Added information for APU Bleed Air.		
2	12 of 20	Removed limitation for ground operation of the APU in known icing conditions.		
2	13 of 20	Changed text from "center" to "single".		
2	20 of 20	Added, changed and deleted information for APU SHUTDOWN.		

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SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES ....15 of 20

Sub-section 4.10 - NORMAL PROCEDURES ....16 of 20

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SECTION 6 - WEIGHT & BALANCE ....20 of 20

INTRODUCTION

The information contained herein supplements or supersedes the basic Airplane Flight Manual only in those areas listed within this supplement. For limitations, procedures and performance information not listed within this supplement, consult the basic Airplane Flight Manual. The information given in this supplement is applicable to an airplane having the Garrett GTCP36-150W Auxiliary Power System installed in accordance with the Supplemental Type Certificate (STC) ST00459NY.

> *NOTE: All references to switches and indicators in this supplement refer to the APU, unless specifically called out as "airplane".*

Revision bars appear only where data has been changed, made addition to or deleted.

SECTION 1 - GENERAL

APU SYSTEM DESCRIPTION

Auxiliary Power Unit Installation

The Auxiliary Power Unit (APU) is installed in the rear equipment bay to provide environmental bleed air and DC electrical power for operating the airplane and its environmental systems during ground and in-flight operations. The unit is installed in a fire and secondary fragmentation containment enclosure located in the rear of the equipment bay between frames 20 and 21.

The installation includes mounting structure, air inlets for the APU and generator, fuel inlet, APU exhaust shrouding and shielding, fire detection and extinguishing. APU system drains are located on the left and right side of the airplane below the main engine pylons. Access to the APU oil dipstick/fill port is provided by a quick release panel located on the left side of the enclosure.

The APU starter/generator is connected to the airplane via the STARTER and PS2 Bus systems. APU bleed air is supplied to the airplane ECS system via the APU load control valve and check valve which prevents main engine bleed flow through the APU.

Starter Generator

The Lucas starter/generator provides rotational starting capability to the APU when powered from the airplane battery or from the external 28 VDC power connection, via the airplane start bus.

When in the generating mode, the starter/generator output is normally connected to the PS2 and PE busbars. PS1 busbar can also be energized by selecting the airplane BUS TIE switch on the flight compartment overhead roof panel to CLOSE.

Generator outputs are monitored and displayed on the APU control panel.

APU Fire Detection/Extinguishing System

Fire protection is provided by a combination of detection and extinguishing systems. In the event of a fire in the APU enclosure, a visual and audible alarm will occur.

The APU will automatically shut down and a fire extinguisher will discharge 5 seconds after the detection of the fire alarm. Switches and indicators for the fire control system are located on the APU control panel (Figure 1).

Fire extinguisher thermal relief is directed into the APU enclosure and the APU will not spool after fire extinguisher discharge or relief.

Fuel System

The APU utilizes fuel from the airplane left main fuel tank. A tap in the fuel supply tube in the left pylon supplies fuel through shrouded fuel lines, through an APU fuel shut-off valve and check valve, to the APU. The MASTER switch on the APU control panel (Figure 1) is used to control the operation of the APU shut-off valve.

Drain System

APU drain lines are located below the left and right main engine pylons and at the lower fuselage. Any fluids (fuel, oil or water) leaking from the APU enclosure, inlets or shrouded lines will drain out the fittings through hoses/tubes to the airplane drain outlets.

APU Bleed Air

When required, the APU can be used to provide bleed air for the environmental system and shaft power for the 28 VDC generator.

These functions can be provided simultaneously or independently by using the APU control panel. The APU bleed air system consists of a load control valve, air ducts and check valve which connect the APU bleed air system to the airplane environmental system.

The life of the Hot Section Components will be extended by operating the APU at no-load governed speed for at least two minutes prior to the application of a bleed air load. The two-minute stabilization at no-load RPM will reduce peak stresses during start and operation by 50%. This will substantially reduce the potential for crack initiation.

Electronic Control Unit (ECU)

An ECU (Garrett P/N 2118330-2) is mounted on the APU support beam on the left of the APU enclosure. The control unit monitors APU speed, exhaust gas temperature, oil pressures, and overcurrent conditions during APU starting and operation and will automatically shut down the APU in the event that design limitations are exceeded.

Signals from switches and pick-ups mounted to the APU power unit are relayed through the ECU to the appropriate indicator on the APU control panel.

Built-In-Test-Equipment (BITE) indicators are provided on the ECU to assist maintenance in determining fault conditions. Automatic ECU shutdown of the APU will occur in flight or on the ground, if any of the following occur:

1. APU fire
2. Low oil pressure
3. High oil temperature
4. DC power interruption to ECU
5. Overcurrent to ECU
6. Loss of EGT signal
7. High EGT - above redline
8. Overspeed - in excess of 110%
9. Loss of speed signal

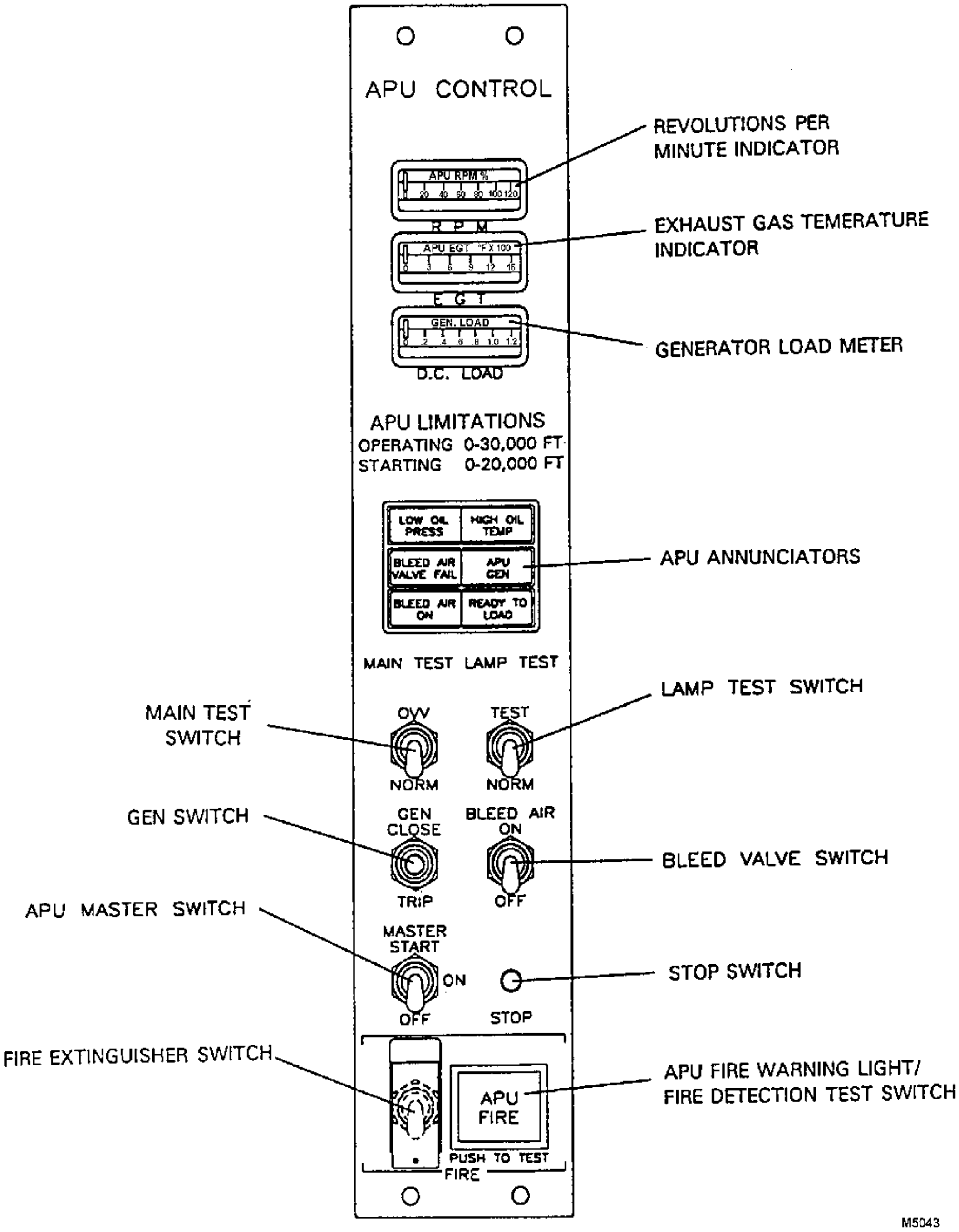
APU Control Panel **(Figure 1)**

The APU control panel is located on the inboard face of the pilot’s bulkhead and contains essential switches and indicators.

Panel switches and indicators are as follows:

DC LOAD meter	Indicates percent of load being generated by APU.
RPM indicator	APU revolutions per minute.
EGT indicator	APU exhaust gas temperature (EGT °F).
MAIN TEST switch	Tests generator control units ability to trip APU generator off-line.
LAMP TEST switch	Makes sure all panel annunciator lamps are operable.
GEN switch	Manually controls generator function.

BLEED AIR switch	Opens and closes load control valve.
MASTER switch	Provides power to APU system and initiates start sequence. When switched off, while APU is operating, the APU will shutdown. Allow APU to come to a complete stop before switching on again.
STOP button	Initiates action to the ECU to shutdown APU.
APU FIRE switch/light	Pushing the switch/light tests the fire detection circuit, by illuminating the APU FIRE switch/light and sounds the fire bell. The switch/light illuminates red and the fire bell sounds when fire detectors sense an over temperature condition. Pushing the switch/light, while the APU is operating, will cause the APU to shutdown.
FIRE EXT switch	Initiates action to the ECU to shut down APU. Manually discharges fire extinguisher.
LOW OIL PRESS annunciator	Illuminates amber when oil pressure is less than 35 PSIG. APU shuts down.
HIGH OIL TEMP annunciator	Illuminates amber when temperature is above 325° F. APU shuts down.
BLEED AIR VALVE FAIL annunciator	Illuminates amber if the load control valve fails to close when BLEED AIR switch is set to OFF.
APU GEN annunciator	Illuminates amber when generator is off line.
BLEED AIR ON annunciator	Illuminates green when load control valve opens.
READY TO LOAD annunciator	Illuminates green to indicate the APU has reached operating speed.



APU Control Panel
Figure 1

Electrical System Description

The APU generating system can provide DC power to all the airplane busses, with the exception of the Start bus. The APU cannot be used to assist during airplane engine starts.

The APU generator can be operated in parallel with the main generators. Circuit interlocks, described below, are incorporated and are active in certain circumstances to inhibit closure of the APU Generator Line Contactor (GLC).

APU GLC interlock relay	Prevents APU generator being excited onto a possible busbar fault while generator control switch is set to CLOSE.
Ground power auxiliary relay	Inhibits GLC input supply when ground power is being used.
Start Inhibit relay	Energized to allow APU to start. Relay energizes when battery switch is on and main battery connectors are de-energized.

Periodically, as a maintenance function, the generator control unit is tested for its ability to trip the generator off-line in the event of overvoltage. This test is performed by momentarily positioning the MAIN TEST switch to the OVV position and noting that the APU GEN warning annunciator illuminates amber and the APU ammeter drops to zero. Positioning the GEN switch momentarily to CLOSE will bring the APU generator back on line and extinguish the APU GEN warning annunciator.

Under normal operating conditions, the transition from starting mode to generating mode is automatic. Manual control of the generator function is provided by a GEN CLOSE/TRIP switch located on the APU control panel. The switch is spring loaded against either operating position.

Circuit Breakers, Current Limiters and Fuses

Flight compartment accessible circuit breakers are located on the DA-D panel in the following locations:

N6	APU FIRE WARN	(Normal background)
N7	APU FIRE EXT	(Red background)
N8	APU CTL	(Normal background)

One 300 AMP starter/generator current limiter is located on the GA panel which requires maintenance action if replacement is required.

Six other system protective fuses are located on the ZK-P, GA and GA-2 panels which require maintenance action if replacement is required.

Rear Equipment Bay Switches

Two remote toggle switches are located on the right side of the aft equipment bay access hatch.

APU EMERG SHUT-OFF	APU Stop/Disable
APU LOCK-OFF RESET	Fire Detection Reset

SECTION 2 - LIMITATIONS

OPERATING LIMITS

Maximum RPM	110%
Maximum operating EGT	1350° F
Operation to	0 - 30,000 ft pressure altitude
Starting to	0 - 20,000 ft pressure altitude

STARTING CYCLE LIMITS

The following limitations are permitted when using airplane batteries or external power.

Minimum allowable Static Air Temperature (SAT) for starting of APU - by oil type

Type II oil per MIL-L-23699	-40° C
Type I oil per MIL-L-7808	-55° C

Maximum transient EGT

15 seconds maximum duration	1400° F to 1500° F

Hung start duration

Above 50% and below 95% RPM	10 seconds maximum

Shutdown the APU if the READY TO LOAD *light does not illuminate within 60 seconds of start*

Starter continuous cranking limits

1st start attempt	30 seconds ON 3 minutes OFF
2nd start attempt	30 seconds ON 3 minutes OFF
3rd start attempt	30 seconds ON 30 minutes OFF

IN-FLIGHT STARTS

Do not attempt an in-flight start of the APU if both main generators have failed.

Start of the APU is prohibited if No. 1 engine has been shutdown due to fire or engine failure.

AUTOMATIC APU SHUTDOWN

If the APU is shut down by the automatic protection system, no attempt must be made to restart the APU until the cause of the shutdown has been established. Prior to the next flight, the APU and rear equipment bay must be inspected for damage.

MAXIMUM GENERATOR ELECTRICAL LOADS

The maximum transient generator load may exceed maximum continuous load:

Maximum continuous operation	0.80
Transient operation	1.2 < 10 Seconds

COMBINED BLEED AIR OPERATIONS

Simultaneous operation of APU bleed air and main engine bleed air is not permitted. Both systems may be operated briefly (1 minute maximum) during change over from one system to the other.

OPERATION IN KNOWN ICING CONDITIONS

Flight operations of the APU are not approved when the airplane is in icing conditions.

GROUND DE-ICING PROCEDURES

The APU must be shut down during ground de-icing operations of the airplane.

ATTENDED OPERATION

The APU must be attended when passengers are on board.

REQUIRED PLACARDS

On or adjacent to APU control panel:

APU LIMITATIONS

OPERATING	0-30,000 FT
STARTING	0-20,000 FT

APU OPERATION DURING AIRPLANE REFUELING

Airplane refueling with the APU running is limited to single point refuel only. Gravity wing refueling is prohibited with the APU running.

Starting of the APU while refueling is in progress is prohibited.

Airplane refueling with the APU running is prohibited if the ambient temperature is above 40° C or when the airplane contains JP4 or is being refueled with JP4.

Airplane boost pumps must be OFF prior to commencing refueling operations.

WEIGHT and BALANCE

NOTE: Removal of any of the APU components, listed in Section 6, will render the APU inoperative.

APU FIRE

	APU Panel		MWS Panel
Fire Bell Sounds and	APU FIRE	With	APU FIRE

STOP	Push (momentarily)
MASTER	OFF
FIRE extinguisher	Lift guard, Select On

If Fire Warning Persists

APU FIRE WARN circuit breaker	Pull (DA-D, N6)

NOTE: Pulling the circuit breaker will silence the warning bell and extinguish the APU FIRE switch/light.

Subsequent Action

Land at the nearest suitable airport.

The cause of the fire warning must be investigated and corrected prior to the next flight.

WARNING: IF FIRE WARNING OCCURS DURING GROUND OPERATIONS, DO NOT CONTINUE TO OPERATE THE AIRPLANE OR THE APU UNTIL POSSIBLE DAMAGE HAS BEEN ASSESSED.

NOTES:

1. *Do not return the MASTER switch to ON.*
2. *The APU FIRE annunciator will remain illuminated and the fire bell will continue to sound until the over temperature condition falls below the system set-point and one of the following actions are taken:*
   - (a) Pushing the APU FIRE switch/light on the APU control panel, or
   - (b) Pushing the APU LOCK-OFF RESET switch located in the aft compartment where the APU is installed.
3. *When an APU fire warning occurs, the APU will immediately and automatically shut down and the fire extinguisher will discharge after 5 seconds.*
4. *Activation of the APU FIRE switch/light does not illuminate the airplane MWS flashers.*

AIRPLANE DOUBLE GENERATOR FAILURE

If both main generators fail, do not start the APU. If both main generators fail and the APU is already operating, the APU may be left on provided the APU generator is operating.

WARNING: A FAILED APU START WITH TWO INOPERATIVE MAIN GENERATORS MAY DEPLETE THE MAIN AIRPLANE BATTERIES.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

AUTOMATIC SHUTDOWN

May be accompanied by **LOW OIL PRESS** and/or **HIGH OIL TEMP**

MASTER ....OFF

WARNING: DO NOT OPERATE THE APU UNTIL CAUSE OF SHUTDOWN HAS BEEN DETERMINED AND CORRECTED.

NOTES:

1. *Automatic shutdown may occur during ground or in-flight operations.*
2. *Do not return the MASTER switch to ON, since this will reset the ECU and remove the BITE indicators necessary to determine the cause of the shutdown.*
3. *After shutdown, all annunciator lights will extinguish unless caused by fire.*
4. *Prior to the next flight, the APU and rear equipment bay must be inspected for damage.*

FAILURE TO START

If the APU fails to start within 10 seconds after setting the MASTER switch to start

STOP..Push (momentarily)
MASTER ....OFF

CAUTION: WAIT 3 MINUTES TO ALLOW FUEL TO DRAIN BEFORE ATTEMPTING ANOTHER START.

GENERATOR FAILURE

APU GEN

GEN ....CLOSE (momentarily)

NOTE: A maximum of two reset attempts is permissible.

If annunciator remains illuminated

GEN ....TRIP (momentarily)

If annunciator extinguishes

Continue APU operations.

BLEED AIR VALVE FAILURE

**BLEED AIR
VALVE FAIL**

BLEED AIR	OFF

CAUTION: DO NOT OPEN THE AIRPLANE MAIN AIR VALVES UNTIL THE APU LOAD CONTROL VALVE MALFUNCTION IS CORRECTED.

Sub-section 4.10 - NORMAL PROCEDURES

APU OPERATIONS

NOTES:

1. *The APU may be started using either the airplane batteries or an external ground power source.*
2. *If the fire extinguisher pressure is depleted, the APU will not spool.*

BEFORE STARTING ON GROUND

Fire extinguisher gauge	Check at or above: 300 psig at - 40° F 575 psig at + 70° F
Circuit breakers	Set
MASTER	OFF
Airplane Battery	ON
Airplane External power	ON (if desired)
MAIN TEST	NORM
LAMP TEST	NORM
GEN	CLOSE (momentarily)
BLEED AIR	OFF
FIRE EXTINGUISHER	Covered by guard
APU FIRE switch/light	Push (check APU FIRE illuminates and fire bell sounds).

STARTING ON GROUND

Airplane left LP fuel cock	OPEN
MASTER	ON
DC LOAD meter	Reads zero
RPM indicator	Reads zero
EGT indicator	Reads approximately ambient
Airplane LH fuel pump	ON, EMERG (when using airplane batteries).
FUEL 1 LO PRESS annunciator (airplane overhead roof panel)	Extinguished
LOW OIL PRESS annunciator	Illuminated
APU GEN annunciator	Illuminated
MASTER	START (momentarily)
RPM indicator	Shows rotation
EGT indicator	Shows rise within 10 seconds after rotation.
APU indicators	Monitor start cycle
LOW OIL PRESS annunciator	Extinguished
READY TO LOAD annunciator	Illuminated
APU GEN annunciator	Extinguished
DC LOAD meter	Indicates load
RPM indicator	Check 100%
EGT indicator	Check within limits
Airplane BUS TIE	CLOSE

CAUTION: IF THE AIRPLANE IS LEFT UNATTENDED WITH THE APU OPERATING, THE MAIN AIRPLANE BATTERIES SHOULD BE LEFT ON. THIS WILL ALLOW THE APU FIRE EXTINGUISHER TO DISCHARGE IN THE EVENT OF AN AUTOMATIC SHUTDOWN DUE TO AN APU FIRE.

BEFORE STARTING IN FLIGHT

MASTER	OFF
Airplane Battery	ON
MAIN TEST	NORM
LAMP TEST	NORM
GEN	CLOSE (momentarily)
BLEED AIR	OFF
FIRE EXTINGUISHER	Covered by guard
APU FIRE switch/light	Push (check APU FIRE illuminates and fire bell sounds).

STARTING IN FLIGHT

Airplane left LP fuel cock	OPEN (Left main engine operating).
MASTER	ON
DC LOAD meter	Reads zero
RPM indicator	Reads zero
EGT indicator	Reads approximately ambient or 0 if ambient is lower.
Airplane LH fuel pump	ON
FUEL 1 LO PRESS annunciator (airplane overhead roof panel)	Extinguished
LOW OIL PRESS annunciator	Illuminated
APU GEN annunciator	Illuminated
MASTER	START (momentarily)
RPM indicator	Shows rotation
EGT indicator	Shows rise within 10 seconds after rotation.
APU indicators	Monitor start cycle
LOW OIL PRESS annunciator	Extinguished
READY TO LOAD annunciator	Illuminated
APU GEN annunciator	Extinguished
DC LOAD meter	Indicates load
RPM indicator	Check 100%
EGT indicator	Check within limits
Airplane BUS TIE	CLOSE

SIMULTANEOUS BLEED AIR and ELECTRICAL SYSTEM OPERATION

APU .... Operating

RPM and EGT indicators .... Within limits

READY TO LOAD annunciator .... Illuminated

BLEED AIR .... ON

BLEED AIR ON annunciator .... Illuminated

Airplane Environmental Controls .... As required

RPM indicator .... Check 100%

EGT indicator .... Check within limits

DC LOAD meter .... Check loading within limits

BLEED AIR ONLY (ELECTRICAL LOAD REMOVED)

GEN .... TRIP (momentarily)

APU GEN annunciator .... Illuminated

READY TO LOAD annunciator .... Illuminated

DC LOAD meter .... Check reads zero

BLEED AIR .... ON

BLEED AIR ON annunciator .... Illuminated

ELECTRICAL LOAD ONLY (BLEED LOAD REMOVED)

BLEED AIR .... OFF

BLEED AIR ON annunciator .... Extinguished

BLEED AIR VALVE FAIL annunciator .... Extinguished

NOTE: If the BLEED AIR VALVE FAIL *annunciator remains illuminated, refer to the* BLEED AIR VALVE FAILURE *procedure in the* ABNORMAL PROCEDURES, Sub-section 4.05 *of this supplement.*

READY TO LOAD annunciator .... Illuminated

GEN .... CLOSE (momentarily)

APU GEN annunciator .... Extinguished

APU SHUTDOWN

NOTE: For shutdown, electrical and bleed loads should remain as they have been. Changing these loads, just prior to APU shutdown, exposes the hot section components to additional thermal gradient changes that will increase potential for crack propagation.

If APU accessory loads are changed, allow a minimum of 3 minutes to elapse prior to shutdown.

STOP	Push (momentarily)
RPM indicator	Check decrease in RPM
EGT indicator	Check decrease in temperature.
MASTER	OFF when RPM indicates zero

SECTION 5 - PERFORMANCE

No Change.

SECTION 6 - WEIGHT & BALANCE

Airplane delivery empty weight includes the APU installation as follows:

ITEM		LBS	X STA	= IN LBS
651-1-331-101	APU INSTALLATION	304.8	449.04	136,868

The following serialized major components are included in the above total:

ITEM		LBS	X STA	= IN LBS
651-1-348-101	APU BUILDUP	175.0	458.9	80,308
23080-005	STARTER/GEN	36.1	458.9	16,566
51539-006H	GCU	2.4	477.5	1146
211833D-2	ECU	6.1	454.0	2769
109512-9	LCV	5.2	473.3	2461
4190-1	FIRE BOTTLE	7.7	469.3	3614

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0017
for
OPERATION ON GRAVEL and NATURAL SURFACE RUNWAYS

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL

P/N 140-590032-0005

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: DM Baker..........

for Ronald K. Rathgeber, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 3/6/03..........

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0017
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OPERATION ON GRAVEL and NATURAL SURFACE RUNWAYS

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INTRODUCTION

The information provided in this supplement is applicable to airplanes operating on gravel or natural surface runways as defined below and having Raytheon Aircraft Company modification 25F518A together with British Aerospace modification 259071B incorporated.

Gravel Runway Construction and Surface

The runway construction must be adequate to support the airplane's operational weight under the climatic conditions during the intended period of use.

Examine the runway condition and bearing strength:

1. The surface must be dry.
2. The surface material must be at least 6 inches thick, well compacted and have a California Bearing Ratio (CBR) of at least 30 and no area of deep loose gravel deficient in fines.
3. The sub-base strength at a depth of eight inches below the surface must be capable of supporting 260 lb/in^2 at 0.1 inch penetration when tested by the "in-place" CBR method or an equivalent method.

Natural Surface

The surface must be dry. The natural surfaces referred to include murrum, laterite and compacted sand, which may have some coverage of course, dry grass or other vegetation, with some loose stones, and must have a California Bearing Ratio (CBR) of not less than 30. These surfaces are hard when dry.

The standard **does not** include grass runways which are covered with lush, dense grass, which causes reduced braking action and increased rolling friction. Examples of such runways can typically be found in the United Kingdom and Northern Europe.

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable except as superseded by the changes provided in this supplement.

SECTION 1 - GENERAL

No change.

SECTION 2 - LIMITATIONS

Runway Slope

Take-off from a gravel or natural surface runway with an uphill slope of more than 1.0% is not permitted.

Thrust Reversers

The thrust reversers must not be used, except in an emergency.

Automatic Power Reserve (APR)

The APR must be serviceable and armed for take-off.

SECTION 3 - EMERGENCY PROCEDURES

No change.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

SUB-SECTION 4.05 - ABNORMAL PROCEDURES

Landing Distance Increments

Landing distance increments specified in the following procedures, presented in the Airplane Flight Manual, are not to be used in conjunction with gravel and natural surface procedures in this Supplement:

1. FLAPS UP or 15° APPROACH and LANDING
2. FLAPS 25° APPROACH and LANDING
3. LANDING ABOVE WAT LIMIT
4. LANDING WITH ONE THRUST REVERSER DEPLOYED
5. LANDING BY USE OF TRIM SYSTEM
6. MAIN HYDRAULIC FAILURE

Landing distance information is not available if landing on a gravel or natural surface runway utilizing one of the above listed Abnormal Procedures.

SUB-SECTION 4.10 - NORMAL PROCEDURES

Braking and Tire Damage

Only gentle braking should be used, where possible, and tires examined after each flight involving gravel or natural surface runways.

Tire Pressure

For take-off with flaps 15° and for landing with flaps 45° it is permissible to reduce the tire pressure; refer to the Pilot's Operating Manual P/N 140-590032-0007, Section VI, Sub-section 2 (Ground Servicing) LANDING GEAR.

SECTION 5 - PERFORMANCE

INSTRUCTIONS FOR USE OF CHARTS

Gravel or Natural Surface Runway Take-off

1. The maximum take-off weight for a flaps 0° take-off as shown in Section 5, Sub-section 5.15 must be reduced by 1000 lb (454 kg).

2. Determine the paved surface take-off field length required and takeoff speeds from Section 5, Sub-section 5.20, Tables 5.20.2 through 5.20.16 for flaps 0°, and Tables 5.20.19 through 5.20.33 for flaps 15°.

   NOTE: Do not apply corrections for runway slope or wind shown in Figures 5.20.17 and 5.20.18 for flaps 0°, and Figures 5.20.34 and 5.20.35 for flaps 15°.

3. To determine the effect of operating on a gravel or natural surface, enter one of the following appropriate graphs at the uncorrected take-off field length scale.

   - Figure 1 - Take-off Field Length From Gravel Runway.

   - Figure 2 - Take-off Field Length From Natural Surface Runway.

Next, move left to the correction line, then move down to read the corrected take-off field length. No correction is necessary for the take-off speeds.

Gravel or Natural Surface Runway Landing

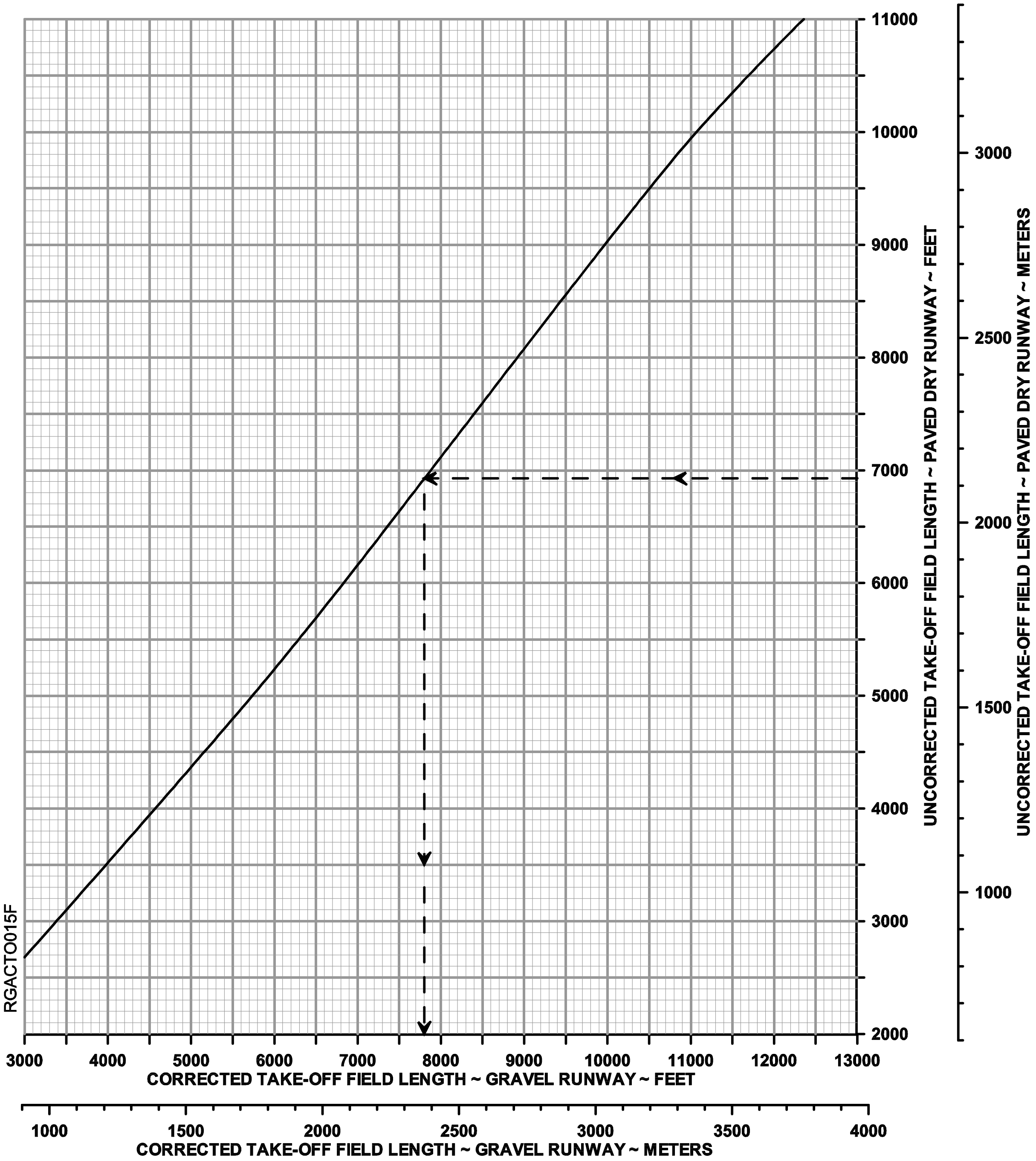
1. Determine the paved surface landing distance requirements from Figure 5.50.1.

2. To determine the effect of operating on a gravel or natural surface, enter one of the following appropriate graphs at the uncorrected landing distance scale.

   - Figure 3 - Landing on Gravel Runway.

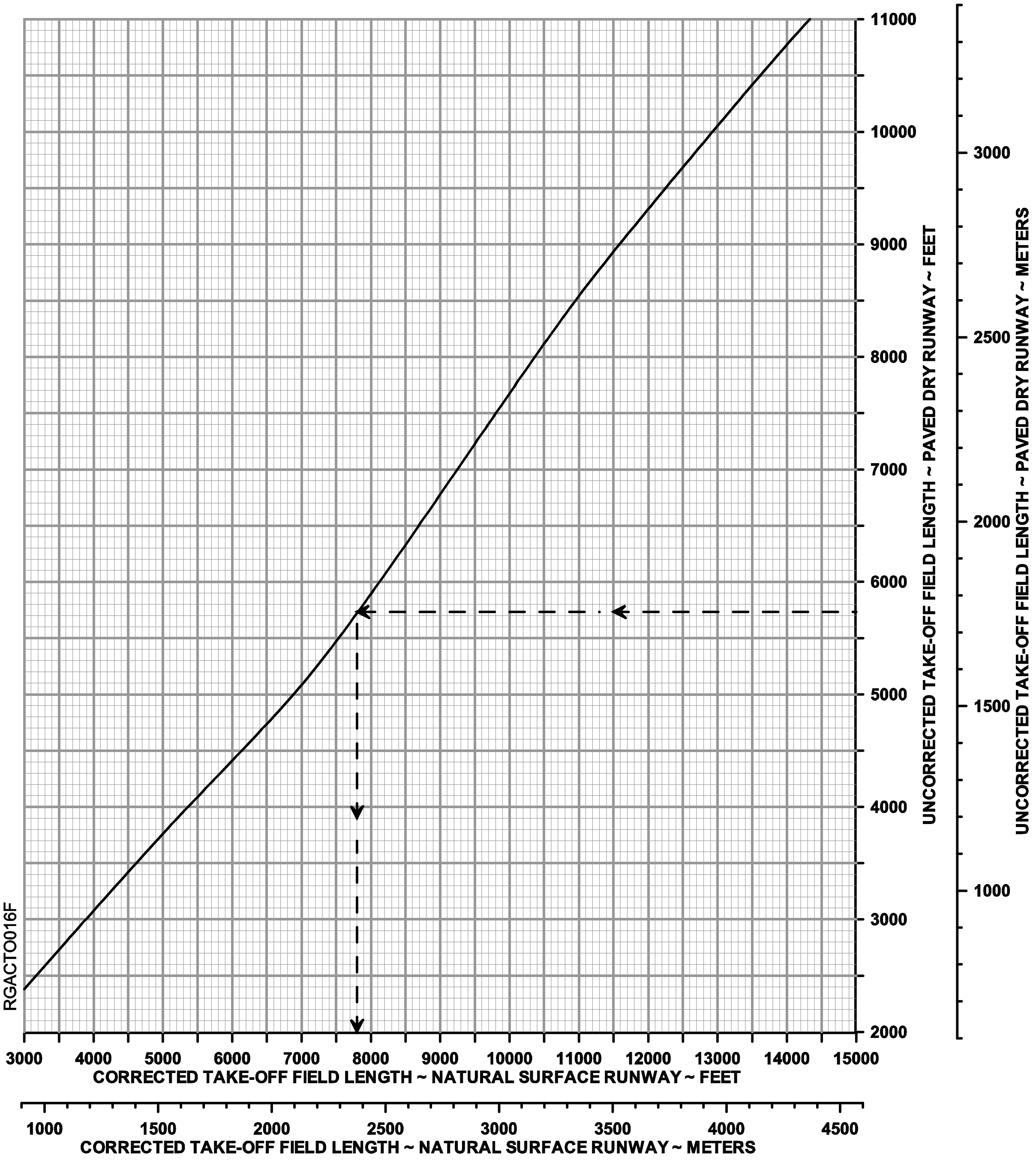
   - Figure 4 - Landing on Natural Surface Runway.

Next, move left to the correction line, then move down to read the corrected landing distance.



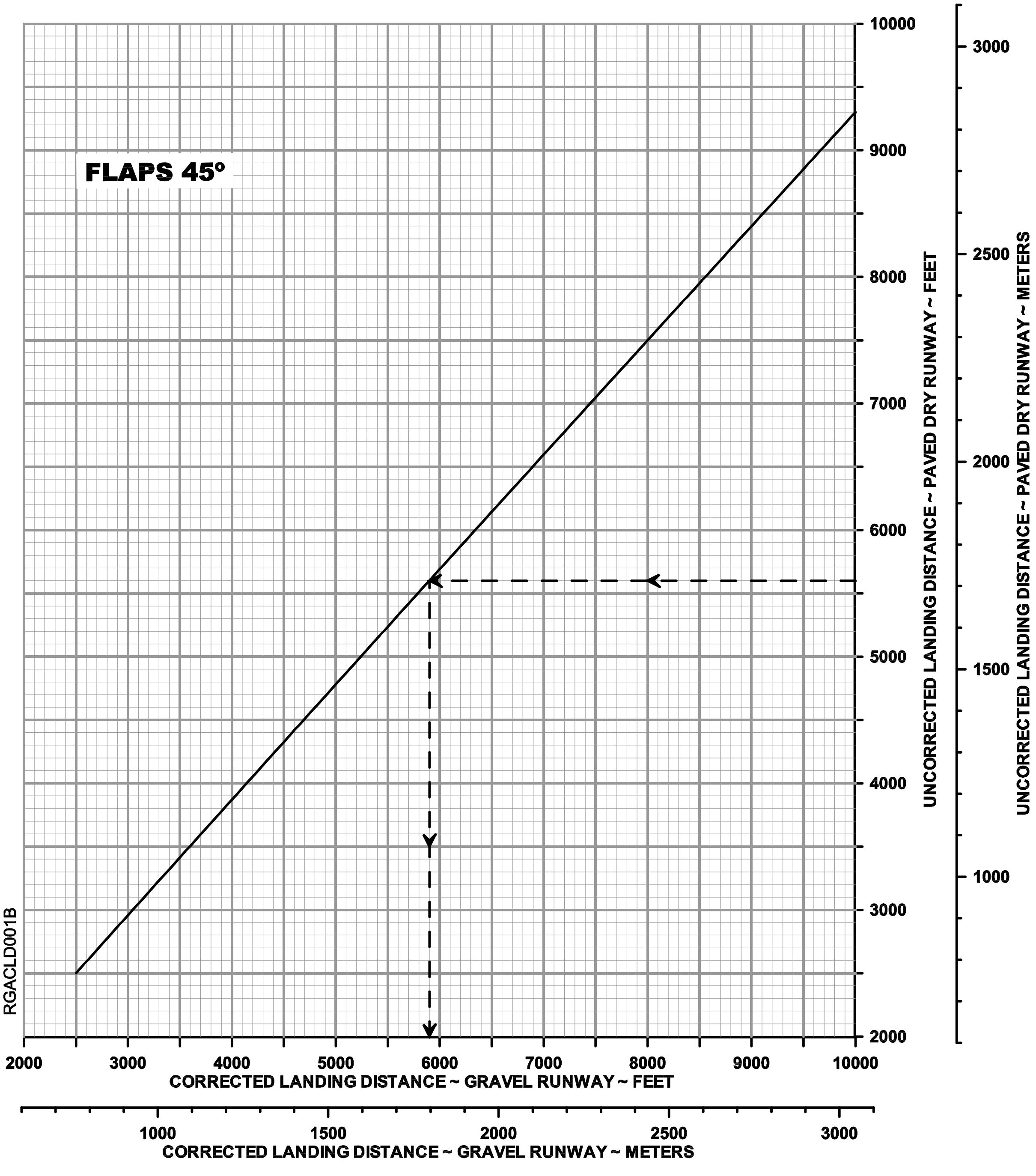
Take-off Field Length From Gravel Runway

Figure 1



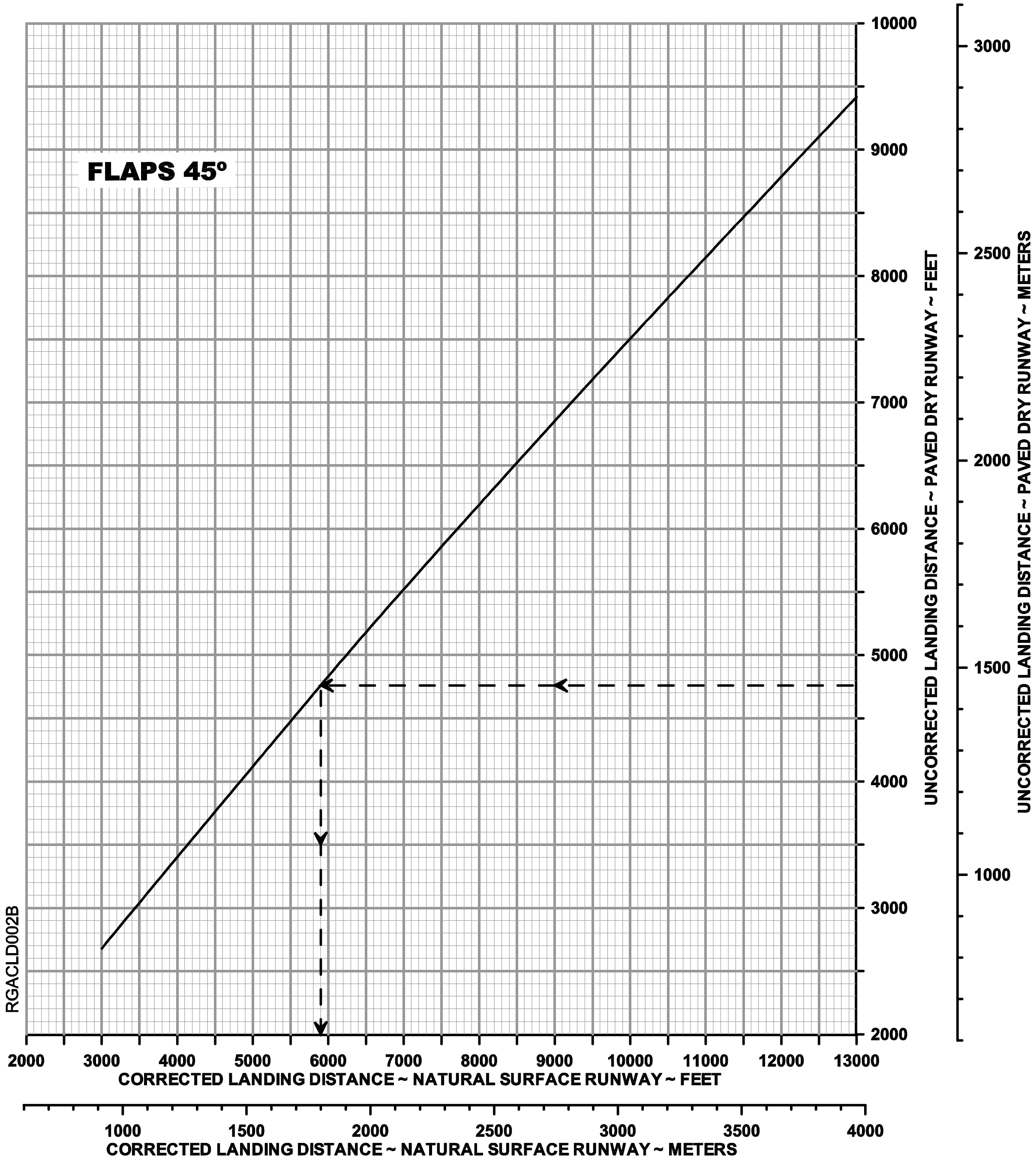
Take-off Field Length From Natural Surface Runway

Figure 2



Landing On Gravel Runway

Figure 3



Landing On Natural Surface Runway

Figure 4

SECTION 6 - WEIGHT & BALANCE

No change.

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0019
for
FLIGHT WITH ONE FUEL PUMP INOPERATIVE

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL:

P/N 140-590032-0005

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: ....

Ronald K. Rathgeber, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 11/13/02

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AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0019
for
FLIGHT WITH ONE FUEL PUMP INOPERATIVE

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0	1-5	Original	Dec 27, 2001	G. Youngdahl 12/27/01
1	1-5	Format change, addition of Pro Line 21 to all page headers.	Nov 13, 2002	DM Bal
	1	Revised Airplane Flight Manual applicability.		
	3	Format change, notes indented.		
	4	Punctuation change, addition of (periods). Format change, notes indented.		

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INTRODUCTION

This supplement applies to an airplane required to fly with one fuel pump unserviceable. The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable except where superseded by the information given in this supplement.

SECTION 1 - GENERAL

No change.

SECTION 2 - LIMITATIONS

FLIGHT WITH ONE FUEL PUMP INOPERATIVE

Fuel Pump (affected side) .... OFF
FUEL PUMP circuit breaker (affected side) .... Pull (DA-D, C7 or D7)
FUEL PUMP CTL circuit breaker (affected side) .... Pull (DA-D, C8 or D8)

Minimum fuel on arrival at the destination must not be less than 600 lb (272 kg) in each wing tank. Flight under these conditions is only permitted to allow the airplane to fly to a place where the unserviceable fuel pump malfunction can be corrected. Such flight is limited to three sectors, routed not more than 30 minutes from a suitable airport for landing.

With only one fuel pump operational, fuel transfer time from the ventral tank to the wing may increase to more than 18 minutes. If both fuel pumps are inoperative, fuel in the ventral tank cannot be transferred.

NOTE: Reliance must not be placed on transfer of fuel from the ventral tank in order to reach the destination.

The APU (if installed) may be operated with the right fuel pump inoperative. The APU may be operated with the left fuel pump inoperative whenever the WING FUEL cock is in the X-FEED or TRANSFER position.

SECTION 3 - EMERGENCY PROCEDURES

ENGINE FIRE IN FLIGHT or **ENGINE SHUTDOWN OR FAILURE IN FLIGHT** Procedure

WING FUEL cock .... Use TRANSFER selectively to maintain wing fuel balance.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

SUB-SECTION 4.05 - ABNORMAL PROCEDURES

Failure of Operative Fuel Pump

FUEL PUMP .... OFF

WING FUEL cock .... WING FUEL

NOTES:

1. *Fuel cannot be transferred and the airplane should land at the nearest suitable airport.*
2. *Wing fuel asymmetry up to 500 lb (227 kg) is acceptable but greater asymmetry can only be corrected by differential engine power.*

SUB-SECTION 4.10 - NORMAL PROCEDURES

Start Checks

FUEL PUMP (operative side) .... ON

WING FUEL cock .... X-FEED

FUEL LO PRESS annunciator (affected side)................ Extinguished

WING FUEL XFD/TFR annunciator .... Illuminated

After Start Checks

WING FUEL cock .... WING FUEL

FUEL LO PRESS annunciator (affected side)................ Illuminated

NOTE: The APU (if installed) should not be operated with the left fuel pump inoperative and the WING FUEL *cock in the* WING FUEL *position. If it is necessary to operate the APU, leave the* WING FUEL *cock in* X-FEED *and monitor fuel balance carefully.*

Before Takeoff Checks

WING FUEL cock .... WING FUEL

NOTES:

1. *Check that the difference in fuel quantity between wing tanks does not exceed 500 lb (227 kg). If necessary, transfer fuel by selecting the* WING FUEL *cock to* TRANSFER*. Return the lever to the* WING FUEL *position when the transfer is complete.*
2. *Takeoff is made with the engine on the side of the failed fuel pump in suction feed.*
3. *The APU (if installed) must be shut down with the left fuel pump inoperative.*

After Takeoff Checks

WING FUEL cock..X-FEED

Maintain wing fuel distribution within limits by selecting the WING FUEL cock to TRANSFER. Return the lever to the X FEED position when the transfer is complete.

Landing Checks

WING FUEL cock..WING FUEL

Go-Around

If wing fuel is approximately 600 lb (272 kg) or less:

WING FUEL cock.. X-FEED

Avoid prolonged high rates of acceleration and nose-up pitch attitudes.

After Landing Checks

WING FUEL cock..X-FEED

SECTION 5 - PERFORMANCE

No change.

SECTION 6 - WEIGHT & BALANCE

No change.

Hawker Beechcraft

Hawker 800XP

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0021
for
CONFIGURATION DEVIATION LIST
(CDL)
Revision 2

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL
P/N 140-590032-0005
for
Airplanes Not Equipped with Hawker Beechcraft Corporation Winglets

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: ....

Ronald K. Rathgeber, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 11/13/02........................

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0021
for
CONFIGURATION DEVIATION LIST (CDL)

Supplement Status	***Date***
Original Issue	Dec 27, 2001
Revision 1	Nov 13, 2002
Revision 2	May 29, 2009

LIST OF EFFECTIVE PAGES

Use the List Of Effective Pages to determine the current status of this supplement. Pages affected by the current revision are indicated by an asterisk (*) preceding the page number.

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
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0	1-12	Original	Dec 27, 2001	
1	1-12	Format change, addition of Pro Line 21 to all page headers.	Nov 13, 2002	
	1	Revised Airplane Flight Manual applicability.		
	3	Addition of 'Pro Line 21' in text.		
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2	1 - 20	Revised all page headers and footers for Revision 2.	5/29/09	
	1 of 20	Title page; revised company header, added Hawker 800XP logo, added Revision 2 in the title and deleted colon from "MANUAL". Added statement for airplanes not equipped with Hawker Beechcraft Corporation Winglets. Revised the copyright statement.		
	2 of 20	Revised Supplement Status and LOEP for Revision 2.		
	3 of 20 thru 5 of 20	Revised Log Of Revisions for Revision 2. Shifted data.		
	6 of 20	Intentionally left blank.		
	7 of 20	CONTENTS; added TITLE PAGE, LIST OF EFFECTIVE PAGES, LOG OF REVISIONS, WING ZONES - REAR VIEW, FLIGHT COMPARTMENT and ALL CONTROL SURFACES or STRUCTURAL AREAS.		

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
2	7 of 20 cont.	CONTENTS (continued); revised all page numbers for additions, and renamed Figures 1, 2, 3, and 4. Shifted data.		
	8 of 20	Intentionally left blank.		
	9 of 20	INTRODUCTION, first paragraph; changed "panels" to read "items". second paragraph; revised "Aircraft Maintenance Manual" to read "Aircraft Flexible Maintenance Schedule". third paragraph; added comma. SECTION 2 - LIMITATIONS; revised "EXCEPTION" to read "EXCEPTIONS". Limitation 2.; revised "items" to read "panels" and added information for bonding straps and rudder gust lock flapper door. Limitation 4.; revised "pilot in command" to read "pilot-in-command" and "panel(s)" to read "item(s)". Limitation 5.; added two commas and revised "panel(s)" to read "item(s)". Limitation 6.; revised "cockpit" to read "flight compartment". Limitation 7.; revised "panel" to read "item" and "panels" to read "items". Shifted SECTION headers and text to the next page.		
	10 of 20	Shifted SECTION headers and data from previous page 9 of 20. SUB-SECTION 5.05 - GENERAL, first paragraph; revised "panel" to read "item". FUSELAGE ZONES table; added bonding straps information. Shifted data.		
	11 of 20	TAILPLANE and ELEVATOR ZONES, Added bonding straps and rudder/rudder tab information. Shifted data.		
	12 of 20	WING ZONES - UPPER SURFACE table, revised "airbrake" to "air brake" in four places. Shifted data.		
	13 of 20	Added WING ZONES - REAR VIEW table with bonding straps information.		

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
2	14 of 20	Added FLIGHT COMPARTMENT table with rudder gust lock flapper door information. Added ALL CONTROL SURFACES or STRUCTURAL AREAS table with static dischargers information.		
	15 of 20 thru 18 of 20	Revised and reformatted Figure titles. Shifted data.		
	19 of 20	Shifted data.		
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INTRODUCTION

This supplement contains the Configuration Deviation List (CDL) which imposes additional requirements for operation of the airplane with certain items missing.

The airframe is divided into discrete areas, as shown in Figure 1, and each panel in the area is given an identification number as shown in Figures 2 thru 4. The panel identification numbers used are those used in the Aircraft Flexible Maintenance Schedule.

This supplement applies to the Hawker 800XP Pro Line 21 airplane and the limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable, except where superseded by the information given in this supplement.

SECTION 1 - GENERAL

No change.

SECTION 2 - LIMITATIONS

Limitations resulting from a missing item, as specified in the REMARKS AND/OR EXCEPTIONS column, must be observed in addition to the normal limitations in Section - 2 LIMITATIONS of the Airplane Flight Manual. The limitations are as follows:

1. No more than one panel from any one area (see Figure 1) may be missing unless specific combinations are listed in this supplement. Unless otherwise specified, panels from different areas may be missing.

2. Where performance penalties are listed as negligible, no more than three such panels may be missing.

   This limitation does not apply to bonding straps in areas F2, F3, W1, W2 and T1. The limitations for these bonding straps are shown in the FUSELAGE ZONE, WING ZONE - REAR VIEW, and TAILPLANE and ELEVATOR ZONES tables in Sub-section 5.05 of this supplement. This limitation also does not apply to the rudder gust lock flapper door in area F2. The limitations for this item are shown in the FLIGHT COMPARTMENT table in Sub-section 5.05 of this supplement.

3. Unless specific performance effects are defined for combinations of missing items, all performance effects for individual items are cumulative.

4. The pilot-in-command shall be notified of each operation with a missing item(s) by listing the missing item(s) in the flight or dispatch release document.

5. The operator shall list, in the airplane log book, an appropriate notation covering the missing item(s) on each flight.

6. The associated limitations must be listed on a placard affixed in the flight compartment in clear view of the pilot-in-command and other appropriate crew member(s).

7. If an additional item is lost in flight, the airplane may not depart the airport at which it subsequently lands until it complies with the requirements of this supplement. A ferry permit may be issued to allow the airplane to be flown to the first station where replacement or repair of the items can be made.

SECTION 3 - EMERGENCY PROCEDURES

No change.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

No change.

SECTION 5 - PERFORMANCE

SUB-SECTION 5.05 - GENERAL

Where a missing item results in a performance effect on the airplane, the effect is given in the REMARKS AND/OR EXCEPTIONS column of the appropriate list.

Unless specific performance effects are defined for combinations of missing items, all performance effects for individual items are cumulative.

FUSELAGE ZONES

			NORMAL CONFIGURATION		
				MINIMUM REQUIRED	
AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION			REMARKS AND/OR EXCEPTIONS
F2 & F3	---------- ----------	Bonding Straps - Nose and Main Gear Doors.	4	0	May be broken or missing, provided airplane is not flown within 50 nautical miles of active or potential lightning activity.
F4	F159	Aft Fairing - Attached to the ventral tank off of the access door.	1	0	The performance decrement is negligible.
F4	F164	Access panel for bonding.	1	0	The performance decrement is negligible.
F4	F165	Access panel to jacking point.	1	0	The performance decrement is negligible.
F4	F166	Access to autopilot servo motor.	1	0	The performance decrement is negligible.
F4	F167	Fuel filling access panel to rear ventral tank.	1	0	The performance decrement is negligible.
F4	F168	Oxygen charging point access panel.	1	0	The performance decrement is negligible.

TAILPLANE and ELEVATOR ZONES

			NORMAL CONFIGURATION		
				MINIMUM REQUIRED	
AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION			REMARKS AND/OR EXCEPTIONS
T1	T14L T15R	Access panels for elevator controls.	2	1	The performance decrement is negligible.
T1	T16L T17R	Access panels to rudder trim controls.	2	1	The performance decrement is negligible.
T1	T18	Hinged cover for access to rudder trim con-rod/tab connection.	1	0	Not in icing conditions. The performance decrement is negligible.
T1	T34L	Vertical stabilizer access to VHF cable clamp.	1	0	The performance decrement is negligible.
T1	---------- ----------	Bonding straps - Rudder and Rudder Tabs.	8	5	One may be broken or missing per surface, provided the condition of the remaining straps is confirmed to be satisfactory prior to each departure.

WING ZONES - BOTTOM SURFACE

AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION	NORMAL CONFIGURATION	MINIMUM REQUIRED	REMARKS AND/OR EXCEPTIONS
W1	W425	Panel covering hydraulic pipes in the wheel well.	1	0	No performance decrement because panel is internal to airframe.
W2	W325	Panel covering hydraulic pipes in the wheel well.	1	0	No performance decrement because panel is internal to airframe.

WING ZONES - UPPER SURFACE

AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION	NORMAL CONFIGURATION	MINIMUM REQUIRED	REMARKS AND/OR EXCEPTIONS
W1 W2	W132 W232	Fairing covering forward portion of air brake outboard hinge.	1 1	0 0	Only if the rear portion of the hinge cover is removed. The performance decrement is negligible.
W1 W2	W133 W233	Fairing covering aft portion of air brake outboard hinge.	1 1	0 0	The performance decrement is negligible.
W1 W2	W134 W234	Fairing covering forward portion of air brake inboard hinge.	1 1	0 0	Only if the rear portion of the hinge cover is removed. The performance decrement is negligible.
W1 W2	W135 W235	Fairing covering aft portion of air brake inboard hinge.	1 1	0 0	The performance decrement is negligible.
W1 W2	---------- ----------	Vortex Generators	17 17	15 15	The performance decrement is negligible. Replacement is made at next scheduled maintenance check.

WING ZONES - REAR VIEW

AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION	NORMAL CONFIGURATION	MINIMUM REQUIRED	REMARKS AND/OR EXCEPTIONS
W1 & W2	---------- ----------	Bonding straps - Ailerons and Aileron Trim Tabs.	12	4	Two may be broken or missing per surface, provided the condition of the remaining straps is confirmed to be satisfactory prior to each departure.
W1 & W2	---------- ----------	Bonding straps - Air brakes (Upper & Lower)	8	4	One may be broken or missing per surface, provided the condition of the remaining straps is confirmed to be satisfactory prior to each departure.
W1 & W2	---------- ----------	Bonding straps - Flaps	4	2	One may be broken or missing per surface, provided the condition of the remaining straps is confirmed to be satisfactory prior to each departure.

FLIGHT COMPARTMENT

			NORMAL CONFIGURATION		
				MINIMUM REQUIRED	
AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION			REMARKS AND/OR EXCEPTIONS
F2	---------- ----------	Rudder gust lock flapper door - Flight compartment left side floor area.	1	0	Flapper door may be inoperative or missing, provided a cover (such as tape) is installed to protect against contamination or damage by entry of foreign objects.

ALL CONTROL SURFACES or STRUCTURAL AREAS

			NORMAL CONFIGURATION		
				MINIMUM REQUIRED	
AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION			REMARKS AND/OR EXCEPTIONS
W1 & W2 and T1	---------- ----------	Static Dischargers - All control surfaces or structural areas.	All	All but one from each surface or area.	One discharger from each control surface or structural area may be damaged or missing.

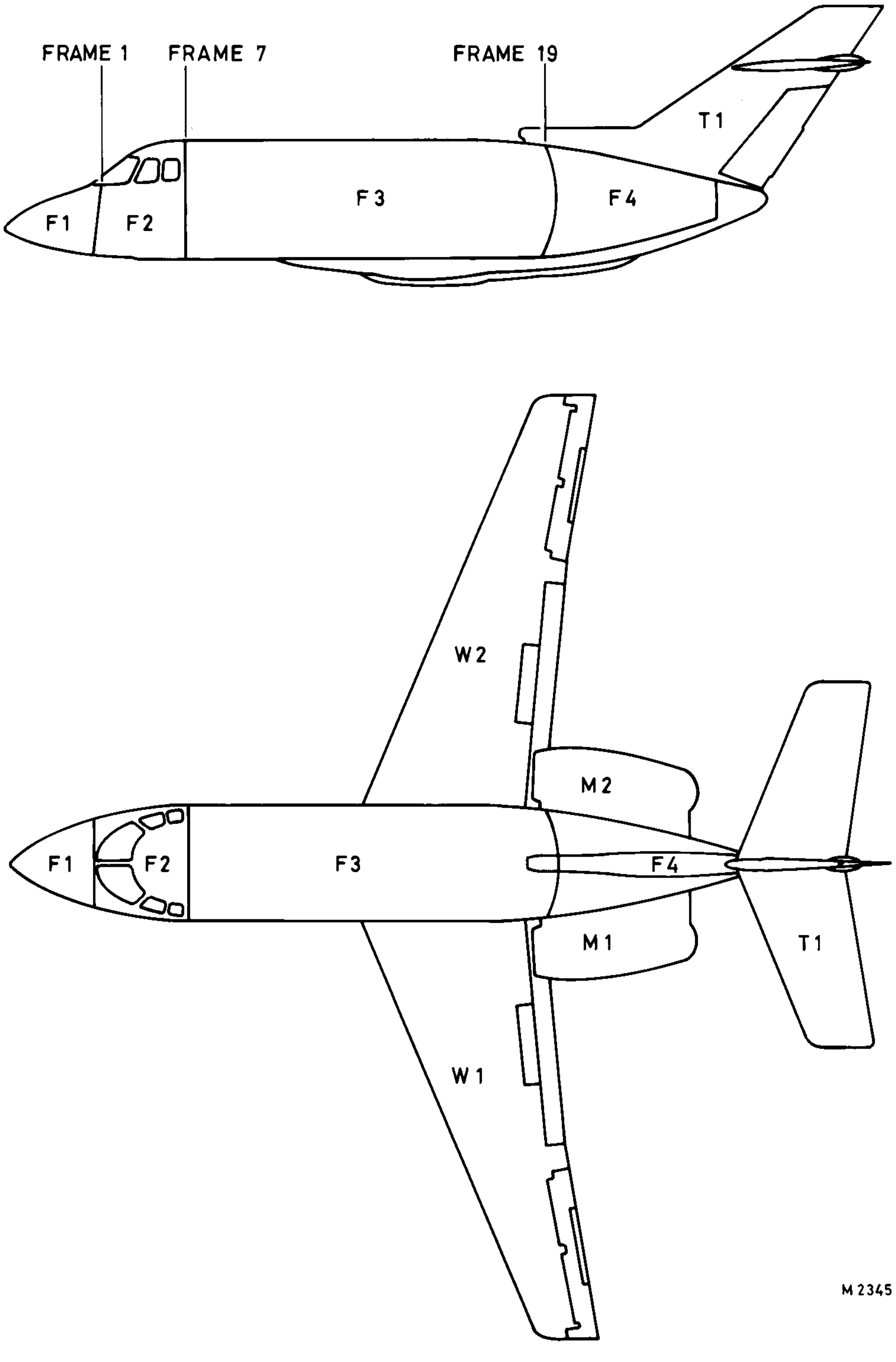
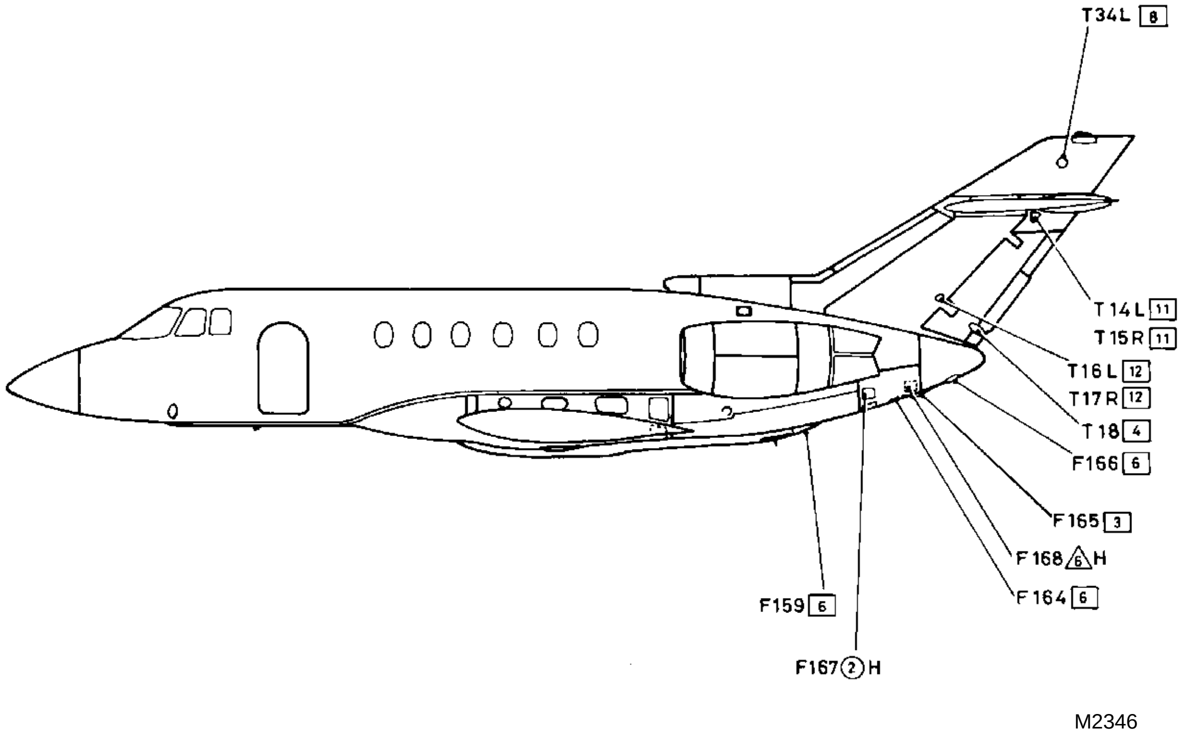


Figure 1
Area Locations



PANEL IDENTIFICATION CODES

F 101 [4] — TYPE & NUMBER OF FASTENERS

101 — PANEL No.

F — AREA IDENTIFIER

PANEL FASTENER SYMBOLS

○ QUICK OPENING (SUCH AS HARTWELL FASTENERS) - NO TOOL REQUIRED

△ QUICK OPENING (SUCH AS CAMLOCK FASTENERS) - TOOL REQUIRED

☐ BOLTED PANEL - TOOL REQUIRED

THE NUMERAL INSIDE EACH SYMBOL DENOTES THE NUMBER OF FASTENERS SECURING THE PANEL. AN ‘H’ ADJACENT TO THE SYMBOL INDICATES THAT THE PANEL IS HINGED.

Figure 2

Panel Identification Numbers - Tail and Aft Fuselage

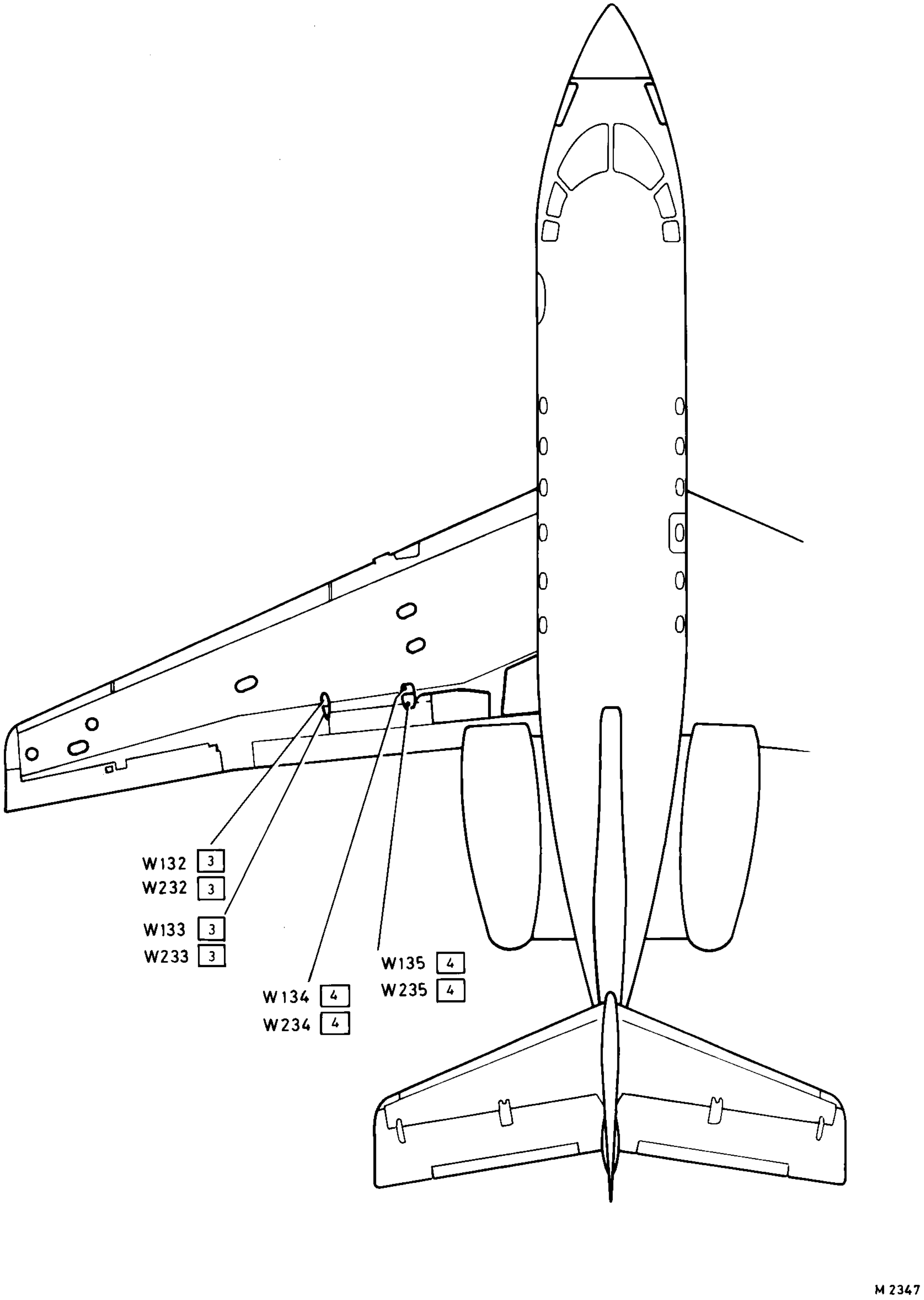


Figure 3

Panel Identification Numbers - Wing

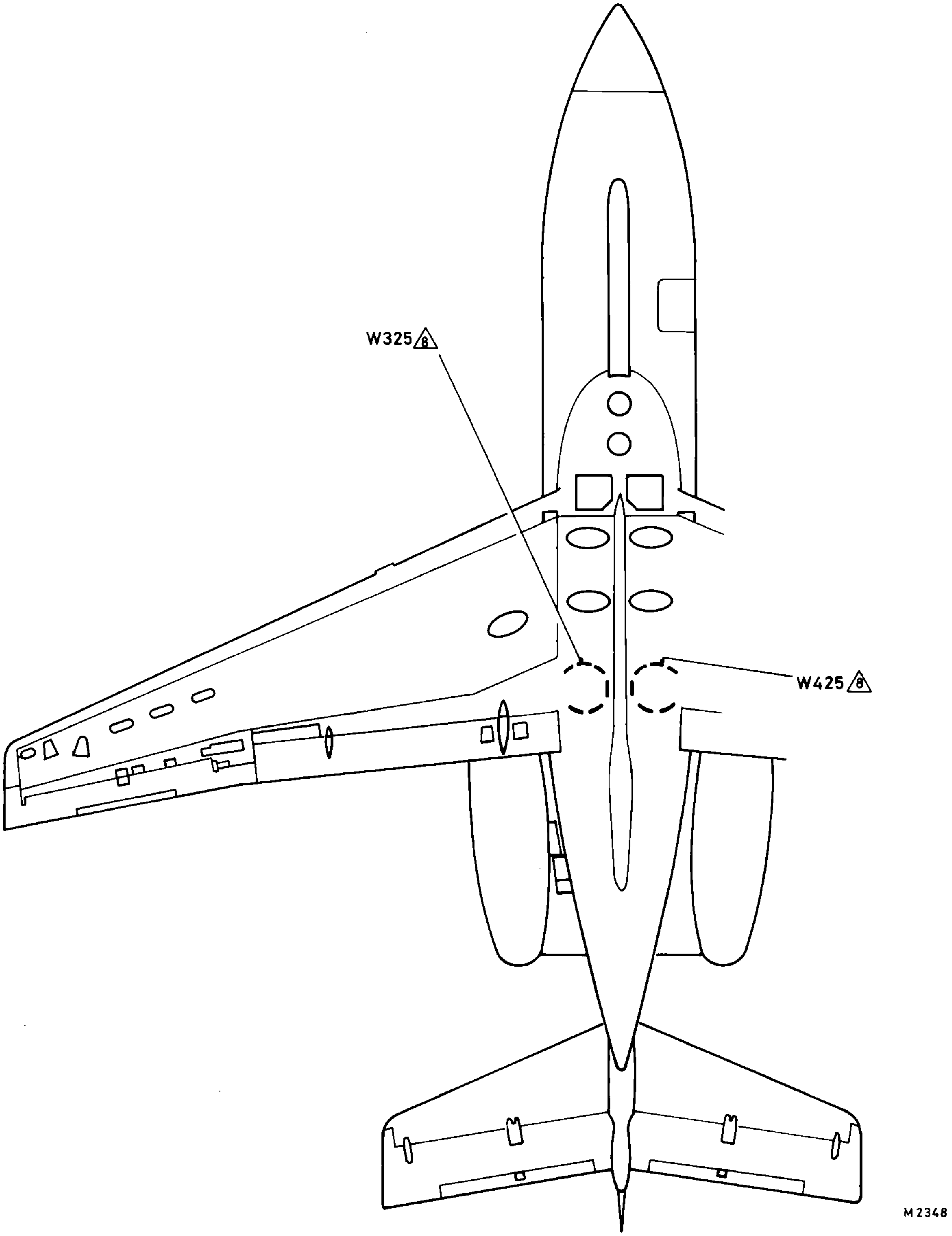


Figure 4
Panel Identification Numbers - Inboard Wing

SECTION 6 - WEIGHT & BALANCE

No change.

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* APPROVED AIRPLANE FLIGHT MANUAL SUPPLEMENT P/N 140-590032-0033

for

OPERATIONS ON WET or CONTAMINATED RUNWAYS

FLAPS 15° and 0°

THIS SUPPLEMENT IS APPLICABLE TO
AIRPLANE FLIGHT MANUAL P/N 140-590032-0005

*** See page 2 of this supplement for a list of approving Aviation Authorities.**

This supplement is developed based on analytical correction of dry, hard surface flight test data, as specified in "Advisory Material Joint 25X1591" for the purpose of complying with the appropriate performance criteria and certification requirements of JAR 25, or other required civil aviation authority regulations.

This supplement is approved by the FAA on behalf of the Aviation Authorities listed on page 2. It is applicable only to airplanes registered under an aviation authority listed on page 2 and must be inserted into Section 7 - SUPPLEMENTS of the applicable Airplane Flight Manual referenced above.

*NOTE: The Airplane Flight Manual must contain either, but not both, this * Approved Airplane Flight Manual Supplement or Non-FAA Approved Performance Data - Topic 1 (latest revision) which is contained in the Non-FAA Approved Data APPENDIX. Operators should refer to the national aviation authority listing, on page 2 of this supplement, to determine which document is to be inserted into their Airplane Flight Manual.*

Should this supplement no longer be required for operational approval, the Non-FAA Approved Performance Data - Topic 1, or latest revision, must be re-inserted in the back of the AFM in the Non-FAA Approved Data APPENDIX.

(a) **If airplane is registered under a listed Aviation Authority on page 2:**
Must have this **Approved Airplane Flight Manual Supplement,* latest revision, inserted into Section 7 - SUPPLEMENTS of the Airplane Flight Manual.

(b) **If airplane is not registered under a listed Aviation Authority on page 2:**
Must have the Non-FAA approved Appendix - Topic 1, latest revision, inserted in the back of the Airplane Flight Manual in the NON-FAA Approved Data APPENDIX.

LIST OF APPROVING AVIATION AUTHORITIES

This supplement is approved by the FAA
on behalf of the following AVIATION AUTHORITIES:

	Aviation Authority	Aviation Authority Delegation/Reference Date
1.	Transport Canada Civil Aviation (TCCA)	TCCA FAX from Andrew Chan dated March 17, 2003
2.	European Aviation Safety Agency (EASA)	EASA Approval No. 2004-4671 dated April 28, 2004 (ENAC) AFM Approval No. AS-168 dated April 27, 2004

Approved By: Kevin D Campbell

for Ronald K. Rathgeber, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 6/15/04

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0	98	Original	March 18, 2003	
1	1-10	Revised company logo (Raytheon Aircraft Company) and updated for Revision 1.	June 15, 2004	Kevin D Campbell
1	1	Changed to read national aviation authority in para (a) and (b).		
1	2	Added European Aviation Safety Agency (EASA) approval and (ENAC) approval under Aviation Authorities.		
1	5	Updated LOEP page entries, 1 thru 11, for Revision 1. Added pages 34A thru 34D to LOEP for Revision 1.		
1	7	Added Revision 1 entries to Log of Revisions.		
1	9	Added Weight, Altitude and Temperature Data (page 34B) and accompanying Figure 2A (page 34C).		
1	10	Re-paginated Table of Contents data.		
1	11	Added first paragraph under Introduction.		
1	34A	Added blank page for pagination.		
1	34B	Added Weight, Altitude and Temperature Data.		
1	34C	Added Figure 2A - Maximum Take-off Weight for Altitude and Temperature for Use with Wet Runways.		
1	34D	Added blank page for pagination.		

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INTRODUCTION

This information has been prepared in the form of guidance material, to assist operators in developing suitable guidance, recommendations or instructions for use by flight crews when operating under adverse runway conditions.

All performance is derived analytically or based on analytically corrected flight test data of dry hard runway surfaces as specified in Advisory Material Joint 25X1591. This performance data is not FAA approved.

Regulations in some countries may require supplementary performance information to be established as additional limitations for the operation of the airplane. Embodiment of this supplement in the Airplane Flight Manual does not constitute a JAR OPS I operational approval. JAR OPS I operational approval (that includes crew requirements, training, equipment, etc.) must be obtained from the national aviation authority of the country of register.

Ground handling characteristics have been demonstrated only on dry, paved runways. Pilots must use extreme care when operating on runways with reduced friction, particularly in crosswinds, when using reverse thrust, or following an engine failure. Adequate control under these conditions has not been demonstrated.

Allowance is made for displacement drag of the wheels in the contaminants and for impingement drag caused by spray striking the airframe and landing gear.

For the contaminants listed in the table below, under most conditions, the airplane will be unable to complete a take-off if an engine fails below V_R since it cannot accelerate on one engine when heavy contaminant drag is present. In addition, controllability of the airplane above hydroplaning speeds with one engine inoperative has not been demonstrated. It is therefore assumed that on contaminated runways, other than "Wet" and "Compacted Snow", a decision speed to continue the take-off would not be taken before V_R, i.e. $V_1=V_R$. For runways classified as "Wet" or contaminated by "Compacted Snow", single engine acceleration characteristics are not affected, therefore more traditional splits between V_1 and V_R are provided.

The following relative density of contaminants has been assumed:

Contaminant	Specific Gravity
Dry Snow	0.2 to 0.35
Wet Snow	0.35 to 0.50
Slush	0.50 to 0.80
Standing Water	1.00

APPLICABILITY

The information provided in this supplement is applicable to Hawker 800XP airplanes, equipped with Collins Pro Line 21 avionics, operating in countries requiring supplemental wet or contaminated runway performance data.

SECTION 1 - GENERAL

JAR Definitions:

Dry Runway

In addition to those runways which are not "wet" or "contaminated" according to the definitions stated below, this category includes those runways which have been specially prepared with grooves or porous pavement and maintained to retain "effectively dry" braking action, even when moisture is present.

Wet Runway

A runway is considered to be wet when it is well soaked but without significant areas of standing water. A runway is considered well soaked when there is sufficient moisture on the runway surface to cause it to appear reflective.

Runway Contaminated By Compacted Snow

A runway is considered contaminated by compacted snow when covered by snow which has been compressed into a solid mass which resists further compression and will hold together or break into lumps if picked up.

Runway Contaminated by Standing Water, Slush or Loose Snow

A runway is considered to be contaminated when more than 25% of the runway surface area (whether in isolated areas or not) within the required length and width being used, is covered by surface water more than 3mm (0.125 inch) deep, or by slush or loose snow equivalent to more than 3 mm (0.125 inch) of water.

SECTION 2 - LIMITATIONS

Weight Limitations

The maximum operating weights are determined from the following performance charts and tables. The maximum take-off weight at a particular airfield may be further restricted by some other performance criteria, such as WAT limit, brake energy limits, the net take-off flight path or enroute terrain clearance requirements. The maximum landing weight may be further restricted by the WAT limit. The actual take-off or landing weight may therefore have to be less than that permitted solely by consideration of the field length.

WARNING: When operating from wet or contaminated runways, take-off and landing weights cannot exceed the weights for dry runway for the same conditions.

Operational Limitations

Operation on Ice and Wet Ice is prohibited.

SECTION 3 - EMERGENCY PROCEDURES

No change to this Section.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

SUB-SECTION 4.05 - ABNORMAL PROCEDURES

SUB-SECTION 4.10 - NORMAL PROCEDURES

No change to these Sub-sections.

SECTION 5 - PERFORMANCE

Performance information in this section is developed based on analytical correction of dry, hard surfaced flight test data, as specified in "Advisory Material Joint 25X1591" for the purpose of complying with the appropriate performance criteria and certification requirements of JAR 25, or other required civil aviation authority regulations.

The level of safety is decreased when operating on contaminated runways, therefore every effort must be made to make sure the runway surface is cleared of any significant precipitation. The performance information assumes any surface contaminant to be of uniform depth and density.

Ground handling characteristics on contaminated surfaces will not be as good as can be achieved on dry or wet runways, in particular, in cross-winds and when using reverse thrust.

TAKE-OFF FIELD LENGTH

Associated Conditions

Engines	*Both engines are at take-off thrust with APR armed.* *Failure of the critical engine occurs at V_1.*
Engine Bleed Air	*Air conditioning bleed off;* *see NOTE 1 for the effect of engine antice bleed.*
Flaps	*Take-off setting, either 15° or 0°.*
Landing Gear	*UP selected after lift-off.*
Runway	*As tabulated.*

NOTES:

1. *To take account of engine antice on the take-off field length, add 10° C to the actual air temperature before entering the tables.*
2. *The wind grid is factored in such a way that the effect of not more than 50% of headwinds and not less than 150% of tailwinds is obtained. Reported winds may therefore be used directly in the grids; however, when a takeoff is to be made into a headwind greater than 40 knots, the chart is to be read at 40 knots.*

Techniques

The following JAR techniques have been assumed:

Normal Take-Off	*Both engines are run up to normal take-off thrust with APR armed, and then the brakes are released. Rotation is initiated at V_R.*
Engine Failure Rejected Take-Off	*Failure of one engine is recognized at V_1. Both thrust levers are closed, maximum wheel braking using anti-skid is applied, airbrakes are opened and the airplane brought to a stop.* *NOTE: No reduction in stopping distance is credited for the use of reverse thrust.*
Rejected Take-Off	*Decision to abort the take-off is made at V_1. Both thrust levers are closed, maximum wheel braking using anti-skid is applied, airbrakes are opened and the airplane brought to a stop.* *NOTE: No reduction in stopping distance is credited for the use of reverse thrust.*
Engine Failure Continued Take-Off	*Following the failure of one engine at V_1, maximum thrust is automatically set on the operating engine. Rotation is initiated at V_R; climb away is made to achieve V_2 appropriate to the flap setting at 35 feet. Landing gear is selected UP 3 seconds after lift-off.*

Instructions For Use Of Tabulated Data and Charts

Determine the appropriate tables for the airplane T.O. WEIGHT (lb/kg) and Field Pressure Altitude (ft).

- For T.O. WEIGHT and Field Pressure Altitude values which are between the tabulated values, use either linear interpolation or the next higher tabulated value.
- With engine antice ON, add 10° C to the actual air temperature before entering the table.
- For temperatures between the tabulated values, use either linear interpolation or the nearest temperature above or below the required temperature, whichever gives the longer distance.
- Determine the runway distance required and the take-off speeds V_1, V_R and V_2 for level runway and a reported wind component of zero using the tables for the appropriate flap setting.
- Shaded regions of the take-off speeds and field length tables represent conditions that exceed either the maximum allowable take-off temperature (ISA + 35° C) or the WAT limit. These conditions are included for use in interpolation to intermediate conditions which may not be limited.

NOTE: The broken arrow lines illustrate the use of the charts.

- Take-Off Decision Speed (V_1) Corrections:

  For Take-Off Decision Speed (V_1) Correction - Wet Runway Surface - Flaps 15°, enter Figure 1.

- Take-Off Decision Speed (V_1) Corrections (continued):

  For Take-Off Decision Speed (V_1) Correction - Wet Runway Surface - Flaps 0°, enter Figure 4.

  For Take-Off Decision Speed (V_1) Correction - Compacted Snow Runway Surface - Flaps 15°, enter Figure 6.

  To use the Take-Off Decision Speed (V_1) Correction graphs (Figures 1, 4 and 6) enter the appropriate chart on the left at the uncorrected take-off decision speed (V_1) and move across to the reference line. Follow the correction lines to the runway slope % (uphill, as shown by the example line, downhill, come back to the relevant %) then move across to obtain the corrected take-off decision speed.

- Take-Off Field Length Corrections (Wet and Compacted Snow):

  For Take-Off Field Length Correction - Wet Runway Surface - Flaps 15°, enter Figure 2.

  For Take-Off Field Length Correction - Wet Runway Surface - Flaps 0°, enter Figure 5.

  For Take-Off Field Length Correction - Compacted Snow Runway Surface - Flaps 15°, enter Figure 7.

  To use the Take-Off Field Length Correction charts (Figures 2, 5 and 7) enter the appropriate chart on the left at the uncorrected take-off field length and move across to the reference line. Follow the correction lines to the runway slope % (uphill, as shown by the example line, downhill, come back to the relevant %) then move across to the reported wind component reference line. Follow the correction lines to the reported wind component (tailwind (-) or headwind) then move across and read the corrected take-off field length.

- Maximum Take-Off Weight Limited by Maximum Brake Energy:

  For Wet Runways with Flaps 0°, enter Figure 3 to obtain the Maximum Take-Off Weight Limited by Maximum Brake Energy. This weight should be compared with the WAT-Limited Maximum Weight and the more restrictive limit used. Brake Energy is never limiting with Flaps 15°.

- Take-Off Field Length Corrections (Standing Water, Slush, Wet and Dry Snow):

  Enter Figures 8 through 11 (Standing Water, Slush, Wet and Dry Snow) with the uncorrected runway distance required and proceed to correct for the known reported specific gravity (if required), depth, runway slope and wind component.

  If specific gravity is not reported then the value which gives the longest field length should be assumed.

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Table 1

Flaps 15°　　Field Pressure Altitude (Sea Level)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	113	115	117	119		
	V_R ~ KIAS	132	132	132	132	132	132	132	132	132	132	132	133	133	133	133	133		
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	140	140	139	138	138		
	TOFL ~ FT	4951	5038	5127	5218	5310	5403	5496	5590	5686	5783	5876	6026	6206	6677	7213	7826		
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	112	111	113	115		
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130		
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	137	136	136	135		
	TOFL ~ FT	4930	5017	5106	5196	5288	5381	5474	5567	5662	5758	5851	5997	6047	6188	6689	7261		
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	112	109	109	111	113	
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	126	127	127	127	127	127	
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	135	135	135	134	133	133	132	
	TOFL ~ FT	4913	5000	5089	5179	5270	5363	5455	5548	5642	5738	5830	5972	6015	5913	6175	6708	7291	
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	108	106	107	109	
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	123	123	124	124	124	124	124	
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	132	132	131	130	129	
	TOFL ~ FT	4880	4967	5055	5144	5235	5326	5418	5510	5603	5698	5790	5927	5963	5856	5754	6144	6686	
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	108	105	103	105	107
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120	120	120	121	121	121	121	121
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	130	130	129	128	128	127	126
	TOFL ~ FT	4841	4928	5016	5104	5194	5285	5376	5467	5559	5653	5744	5877	5905	5794	5686	5627	6122	6640
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	108	105	102	101	103
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	116	116	117	117	117	118	118	118
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	128	127	126	126	125	124	123
	TOFL ~ FT	4802	4888	4975	5063	5152	5242	5331	5422	5512	5605	5695	5823	5845	5729	5617	5516	5561	6036
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	108	105	102	99	100
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	114	114	115	115	115	115
	V_2 ~ KIAS	127	127	127	127	127	127	127	126	126	126	126	126	125	124	124	123	122	121
	TOFL ~ FT	4762	4848	4934	5021	5110	5198	5287	5376	5466	5557	5646	5771	5785	5665	5547	5441	5339	5557
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	112	113	111	111	112	112	113	113
	V_2 ~ KIAS	127	127	127	127	127	127	126	126	126	126	126	126	124	122	121	121	120	119
	TOFL ~ FT	4725	4810	4896	4982	5069	5157	5245	5333	5422	5512	5600	5720	5728	5603	5480	5368	5260	5117
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	109	109	110	110
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	126	124	120	119	119	118	117
	TOFL ~ FT	4688	4773	4858	4944	5030	5117	5204	5291	5379	5467	5555	5670	5671	5541	5413	5296	5182	5035
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	106	107	107
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	126	124	121	117	116	115	115
	TOFL ~ FT	4656	4740	4825	4910	4996	5082	5168	5254	5340	5427	5514	5625	5618	5484	5351	5228	5108	4957
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	103	104	104
	V_2 ~ KIAS	128	128	128	128	127	127	127	127	127	127	127	127	124	121	117	114	113	112
	TOFL ~ FT	4629	4712	4796	4881	4966	5051	5136	5222	5307	5393	5479	5585	5571	5432	5294	5165	5039	4883
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	110	107	105	102	99	96
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	110	108	105	102	100	101
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	127	127	127	125	121	117	114	111	110
	TOFL ~ FT	4607	4690	4774	4858	4942	5027	5111	5196	5280	5365	5450	5551	5530	5386	5242	5107	4975	4815

WET RUNWAY CONDITION

RGACTO002C

Table 2

Flaps 15° **Field Pressure Altitude (1000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	114	116	118			
	V_R ~ KIAS	132	132	132	132	132	132	132	132	132	132	132	133	133	133	133			
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	140	139	138	138			
	TOFL ~ FT	5123	5214	5306	5400	5496	5593	5690	5786	5886	5986	6119	6220	6677	7198	7756			
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	110	112	114			
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130			
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	137	137	136	135			
	TOFL ~ FT	5101	5191	5283	5377	5473	5569	5665	5762	5861	5960	6090	6163	6190	6673	7205			
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	108	110	112		
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	127	127	127	127	127		
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	135	135	135	135	134	134	133	132		
	TOFL ~ FT	5083	5173	5265	5358	5454	5549	5645	5741	5840	5938	6066	6132	6077	6162	6655	7217		
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	107	106	108	110	
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	123	123	124	124	124	124	124	
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	132	131	130	130	129	
	TOFL ~ FT	5047	5137	5229	5322	5416	5511	5606	5701	5799	5896	6021	6081	6020	5932	6095	6615	7194	
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	107	104	104	106	
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120	120	121	121	121	121	121	
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	130	129	129	128	127	126	
	TOFL ~ FT	5007	5097	5187	5280	5374	5468	5562	5656	5752	5848	5971	6024	5958	5865	5757	6054	6592	
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	106	104	101	102	104
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	116	117	117	117	117	118	118	118
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	127	127	126	125	124	123	122
	TOFL ~ FT	4965	5054	5144	5236	5329	5422	5515	5608	5703	5798	5918	5965	5893	5795	5682	5589	5989	6500
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	111	109	106	103	101	99	101
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	114	114	115	115	115	115	115
	V_2 ~ KIAS	127	127	127	127	126	126	126	126	126	126	126	125	125	124	123	122	121	120
	TOFL ~ FT	4924	5012	5101	5192	5284	5376	5468	5560	5654	5748	5865	5906	5829	5725	5607	5509	5510	5989
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	103	101	98	97
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	112	111	111	112	112	113	113	113
	V_2 ~ KIAS	127	127	127	126	126	126	126	126	126	126	126	124	123	122	121	120	119	118
	TOFL ~ FT	4884	4972	5061	5151	5242	5333	5424	5515	5608	5700	5814	5848	5767	5658	5535	5431	5334	5478
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	103	100	98	94
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	108	109	110	110	110
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	126	126	124	121	120	119	118	117	116
	TOFL ~ FT	4845	4933	5021	5110	5200	5290	5380	5471	5562	5653	5764	5792	5705	5591	5464	5354	5250	5116
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	103	100	97	94
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	106	107	107	107
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	125	122	118	117	116	115	114
	TOFL ~ FT	4811	4898	4985	5074	5163	5252	5342	5431	5521	5611	5719	5740	5648	5529	5396	5280	5171	5032
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	97	94
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	103	103	104	104
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	125	122	118	115	114	113	112
	TOFL ~ FT	4781	4868	4955	5043	5131	5220	5308	5396	5485	5575	5679	5694	5596	5472	5334	5212	5096	4952
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	97	94
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	101	101
	V_2 ~ KIAS	128	128	128	128	128	128	128	127	127	127	127	125	122	119	115	112	110	110
	TOFL ~ FT	4757	4844	4930	5018	5106	5193	5281	5368	5456	5544	5646	5654	5550	5421	5277	5149	5026	4877

WET RUNWAY CONDITION

RGACTO002C

Table 3

Flaps 15° **Field Pressure Altitude (2000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	114	116	118				
	V_R ~ KIAS	132	132	132	132	132	132	132	132	132	132	133	133	133	133				
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	139	139	138				
	TOFL ~ FT	5306	5398	5496	5594	5694	5794	5896	5998	6103	6225	6360	6702	7200	7748				
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	110	112	114	115			
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130			
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	137	137	136	136	135			
	TOFL ~ FT	5282	5375	5472	5570	5669	5769	5870	5971	6075	6196	6325	6281	6675	7189	7753			
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	110	108	110	111			
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126	127	127	127	127	127			
	V_2 ~ KIAS	136	136	136	136	136	135	135	135	135	135	135	135	134	133	133			
	TOFL ~ FT	5262	5355	5452	5550	5649	5748	5849	5949	6052	6172	6294	6244	6177	6639	7172			
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	110	108	105	107	109		
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	124	124	124	124	124	124		
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	131	131	130	129		
	TOFL ~ FT	5225	5317	5414	5511	5609	5708	5807	5907	6009	6127	6242	6188	6115	6083	6572	7129		
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	110	107	105	103	106	107	
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120	121	121	121	121	121	121	
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	130	130	129	128	127	127	126	
	TOFL ~ FT	5183	5275	5370	5467	5564	5662	5760	5859	5960	6075	6184	6125	6047	5944	6016	6530	7095	
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	110	107	105	102	101	103	
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	117	117	117	118	118	118	118	
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	127	126	125	125	124	123	
	TOFL ~ FT	5138	5230	5325	5420	5517	5613	5711	5808	5908	6021	6124	6060	5976	5869	5759	5932	6451	
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	110	107	105	102	99	100	102
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	114	114	115	115	115	115	115	115
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	125	124	123	122	122	121	120
	TOFL ~ FT	5094	5185	5279	5374	5470	5565	5662	5758	5856	5968	6063	5995	5906	5794	5679	5604	5936	6441
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	110	107	104	102	99	96	98
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	112	111	112	112	112	113	113	113
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125	123	122	121	120	119	119	118
	TOFL ~ FT	5052	5143	5236	5330	5425	5519	5615	5710	5807	5916	6005	5932	5839	5721	5602	5520	5429	5896
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	110	107	104	101	99	96	94
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	110	108	109	109	110	110	110
	V_2 ~ KIAS	127	127	127	127	127	127	126	126	126	126	125	122	120	119	118	117	117	116
	TOFL ~ FT	5011	5101	5194	5287	5381	5474	5568	5663	5758	5866	5948	5870	5772	5649	5525	5437	5331	5345
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	101	99	96	93
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	106	106	107	107	107
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	125	122	119	117	116	115	114	114
	TOFL ~ FT	4974	5064	5156	5248	5341	5434	5527	5620	5714	5820	5895	5813	5709	5582	5452	5358	5245	5112
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	111	109	107	104	101	99	96	93
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	103	104	104	105
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	126	123	120	116	114	113	112	111
	TOFL ~ FT	4943	5032	5124	5215	5307	5399	5491	5583	5676	5780	5848	5761	5652	5519	5384	5283	5164	5026
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	111	109	107	104	101	99	96	93
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	111	109	107	104	101	101	101	102
	V_2 ~ KIAS	128	128	128	128	127	127	127	127	127	127	126	123	120	116	113	111	110	109
	TOFL ~ FT	4917	5006	5097	5188	5279	5370	5461	5552	5644	5746	5807	5715	5600	5463	5322	5214	5089	4945

WET RUNWAY CONDITION

RGACTO002C

Table 4

Flaps 15° **Field Pressure Altitude (3000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	114	115	117	119				
	V_R ~ KIAS	132	132	132	132	132	132	132	132	133	133	133	133	133	133				
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	139	139	138	138				
	TOFL ~ FT	5488	5590	5693	5796	5900	6006	6111	6219	6340	6478	6779	7219	7751	8345				
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	111	111	113	115				
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	130	130				
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	137	137	136	136	135				
	TOFL ~ FT	5463	5564	5667	5770	5874	5979	6083	6190	6310	6443	6410	6693	7190	7741				
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	110	108	109	111	113			
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	127	127	127	127	127	127			
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	134	133	133	132			
	TOFL ~ FT	5443	5544	5646	5748	5852	5956	6060	6166	6285	6412	6373	6314	6640	7152	7723			
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	112	110	108	106	107	109			
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	124	124	124	124	124			
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	132	131	131	130	129			
	TOFL ~ FT	5404	5504	5606	5707	5810	5914	6016	6122	6239	6359	6316	6253	6184	6552	7082			
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	112	110	108	106	103	105	107		
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120	121	121	121	121	121		
	V_2 ~ KIAS	131	131	131	131	131	131	130	130	130	130	130	129	128	128	127	126		
	TOFL ~ FT	5360	5459	5560	5661	5763	5865	5967	6071	6187	6301	6253	6185	6111	6011	6485	7034		
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	112	110	108	105	103	100	103	104	
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	117	117	117	118	118	118	118	
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	127	126	126	125	124	123	122	
	TOFL ~ FT	5313	5412	5512	5612	5713	5814	5915	6017	6131	6239	6188	6115	6035	5931	5893	6393	6948	
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	112	110	108	105	103	100	99	101	
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	114	114	115	115	115	115	115	115	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125	124	124	123	122	121	120	
	TOFL ~ FT	5267	5366	5464	5563	5663	5763	5862	5964	6076	6178	6122	6045	5960	5851	5765	5882	6396	
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	108	105	102	100	97	97	
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	111	112	112	112	113	113	113	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	123	122	121	121	120	119	118	
	TOFL ~ FT	5224	5321	5419	5517	5616	5714	5813	5913	6023	6119	6059	5978	5888	5773	5681	5587	5850	
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	108	105	102	100	97	94	
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	108	109	109	110	110	110	
	V_2 ~ KIAS	127	127	127	126	126	126	126	126	126	125	123	120	119	119	118	117	116	
	TOFL ~ FT	5181	5277	5374	5471	5569	5666	5764	5863	5971	6060	5996	5911	5816	5696	5599	5499	5401	
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	107	105	102	100	97	94	
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	107	105	106	107	107	107	
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	125	123	120	117	116	115	115	114	
	TOFL ~ FT	5142	5238	5334	5430	5527	5623	5720	5817	5924	6007	5938	5849	5748	5624	5520	5414	5310	
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	111	109	107	105	102	100	97	94	
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	107	105	103	104	104	104	
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	126	123	120	117	114	113	112	112	
	TOFL ~ FT	5108	5204	5299	5394	5490	5586	5681	5777	5882	5959	5886	5792	5686	5556	5447	5334	5224	
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	111	109	107	105	102	99	97	94	
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	111	109	107	105	102	100	101	102	
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	126	123	120	117	114	111	110	109	
	TOFL ~ FT	5081	5176	5271	5365	5460	5554	5649	5744	5847	5918	5840	5741	5629	5494	5379	5259	5142	

WET RUNWAY CONDITION

RGACTO002C

Table 5

Flaps 15° **Field Pressure Altitude (4000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	115	116	118					
	V_R ~ KIAS	132	132	132	132	132	133	133	133	133	133	133	133	133					
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	139	139	138	138					
	TOFL ~ FT	5685	5796	5905	6015	6125	6230	6337	6460	6602	6887	7314	7783	8352					
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	111	113	114					
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	130					
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	137	137	137	136	135					
	TOFL ~ FT	5659	5770	5878	5987	6097	6201	6307	6429	6565	6554	6782	7221	7755					
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	109	108	110	112				
	V_R ~ KIAS	126	126	126	126	126	126	126	127	127	127	127	127	127	127				
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	134	134	133	132				
	TOFL ~ FT	5637	5747	5855	5963	6072	6176	6283	6403	6534	6517	6472	6670	7165	7714				
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	111	108	106	106	108	110			
	V_R ~ KIAS	123	123	123	123	123	123	123	123	124	124	124	124	124	124	124			
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	132	132	131	130	130	129			
	TOFL ~ FT	5596	5705	5812	5920	6028	6131	6237	6355	6480	6459	6409	6350	6564	7072	7634			
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	110	108	106	104	104	106			
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	121	121	121	121	121			
	V_2 ~ KIAS	131	131	130	130	130	130	130	130	130	130	129	129	128	127	126			
	TOFL ~ FT	5550	5658	5764	5870	5977	6080	6184	6301	6420	6395	6341	6277	6203	6474	6995			
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	110	108	106	104	101	102	104		
	V_R ~ KIAS	116	116	116	116	116	116	116	116	117	117	117	117	118	118	118	118		
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	127	126	126	125	124	124	123		
	TOFL ~ FT	5502	5608	5713	5818	5924	6026	6129	6244	6358	6328	6269	6201	6122	6024	6357	6890		
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	110	108	106	104	101	98	100		
	V_R ~ KIAS	113	113	113	113	113	113	113	113	114	114	115	115	115	115	115	115		
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	124	124	123	122	121	121		
	TOFL ~ FT	5453	5558	5663	5767	5871	5972	6074	6187	6295	6261	6198	6125	6042	5938	5853	6344		
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	101	98	97		
	V_R ~ KIAS	113	113	112	112	112	112	112	112	112	111	112	112	112	113	113	113		
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	122	122	121	120	119	118		
	TOFL ~ FT	5407	5511	5614	5717	5821	5920	6022	6133	6235	6196	6130	6052	5963	5854	5764	5799		
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	101	98	95		
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	109	109	110	110	110		
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	120	120	119	118	117	117		
	TOFL ~ FT	5362	5465	5567	5668	5771	5869	5969	6079	6175	6132	6062	5980	5885	5771	5675	5578		
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	101	98	95		
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	106	107	107	107		
	V_2 ~ KIAS	127	127	127	127	127	126	126	126	125	123	120	118	116	116	115	114		
	TOFL ~ FT	5321	5423	5524	5624	5725	5823	5922	6030	6120	6073	5998	5912	5812	5693	5590	5487		
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	111	110	108	105	103	100	98	95		
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	103	104	104		
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	123	121	118	115	114	113	112		
	TOFL ~ FT	5285	5386	5486	5586	5686	5783	5881	5987	6071	6020	5940	5850	5744	5619	5511	5401		
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	111	109	107	105	103	100	98	95		
	V_R ~ KIAS	112	112	112	112	112	112	112	112	111	110	108	105	103	101	101	101		
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	124	121	118	115	112	111	110		
	TOFL ~ FT	5256	5355	5455	5553	5652	5748	5846	5950	6029	5972	5888	5793	5682	5552	5437	5321		

WET RUNWAY CONDITION

RGACTO002C

Table 6

Flaps 15° **Field Pressure Altitude (5000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	113	115	116	118						
	V_R ~ KIAS	132	133	133	133	133	133	133	133	133	133	133	133						
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	139	139	138	138						
	TOFL ~ FT	5894	6013	6126	6244	6350	6459	6598	6659	7010	7439	7887	8371						
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	111	112	114	115					
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	130					
	V_2 ~ KIAS	138	138	138	138	138	138	138	137	137	137	136	136	135					
	TOFL ~ FT	5867	5985	6097	6214	6321	6429	6566	6609	6623	6899	7318	7780	8356					
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	109	108	110	111					
	V_R ~ KIAS	126	126	126	127	127	127	127	127	127	127	127	127	127					
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	134	134	133	133					
	TOFL ~ FT	5844	5961	6073	6189	6296	6403	6539	6578	6586	6609	6762	7188	7725					
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	109	106	106	107	109				
	V_R ~ KIAS	123	123	123	123	123	123	123	123	124	124	124	124	124	124				
	V_2 ~ KIAS	133	133	133	133	133	133	133	132	132	132	131	130	130	129				
	TOFL ~ FT	5801	5917	6028	6143	6249	6356	6490	6525	6528	6546	6491	6586	7081	7625				
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	108	106	104	103	105	107			
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	121	121	121	121	121	121			
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	129	129	128	127	127	126			
	TOFL ~ FT	5753	5868	5977	6091	6197	6303	6434	6465	6464	6476	6417	6346	6483	6985	7545			
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	111	110	108	106	104	102	101	103			
	V_R ~ KIAS	116	116	116	116	116	116	116	116	117	117	117	118	118	118	118			
	V_2 ~ KIAS	128	128	128	128	128	128	128	127	127	126	126	125	125	124	123			
	TOFL ~ FT	5703	5815	5924	6036	6141	6247	6375	6403	6397	6404	6341	6266	6195	6346	6860			
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	111	110	108	106	104	102	99	100	101		
	V_R ~ KIAS	113	113	113	113	113	113	113	114	114	115	115	115	115	115	115	116		
	V_2 ~ KIAS	126	126	126	126	126	126	126	125	125	125	124	123	122	122	121	120		
	TOFL ~ FT	5652	5763	5871	5981	6086	6190	6317	6341	6330	6332	6265	6186	6109	6033	6314	6843		
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	111	110	108	106	104	102	99	96	98	100	
	V_R ~ KIAS	113	113	113	113	112	112	112	111	111	112	112	112	113	113	113	113	113	
	V_2 ~ KIAS	126	126	126	126	126	126	126	124	123	122	122	121	120	119	119	118	117	
	TOFL ~ FT	5604	5714	5820	5929	6033	6137	6260	6281	6266	6262	6191	6108	6026	5944	5853	6257	6794	
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	101	99	96	94	96	
	V_R ~ KIAS	112	112	112	112	112	112	112	111	110	108	109	109	110	110	110	110	110	
	V_2 ~ KIAS	126	126	126	126	126	126	126	124	122	120	120	119	118	117	117	116	115	
	TOFL ~ FT	5557	5665	5770	5878	5980	6083	6205	6222	6202	6193	6119	6031	5943	5856	5759	5674	6161	
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	101	99	96	94	92	
	V_R ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	106	106	107	107	107	107	
	V_2 ~ KIAS	127	126	126	126	126	126	126	125	123	120	118	117	116	115	114	114	113	
	TOFL ~ FT	5514	5620	5725	5831	5933	6035	6155	6168	6143	6129	6051	5959	5865	5772	5669	5569	5563	
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	101	99	96	93	90	
	V_R ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	103	104	104	104	105	
	V_2 ~ KIAS	127	127	127	127	127	127	126	125	123	121	118	115	114	113	112	111	111	
	TOFL ~ FT	5477	5581	5685	5790	5891	5993	6110	6119	6090	6071	5988	5892	5793	5693	5584	5478	5335	
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	110	109	108	106	103	101	99	96	93	90	
	V_R ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	103	101	100	101	102	102	
	V_2 ~ KIAS	127	127	127	127	127	127	127	125	123	121	118	116	113	111	110	109	108	
	TOFL ~ FT	5446	5549	5652	5755	5856	5957	6072	6078	6044	6019	5932	5832	5726	5620	5504	5391	5243	

WET RUNWAY CONDITION

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Table 7

Flaps 15° **Field Pressure Altitude (6000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 133 140 6056	113 133 140 6195	113 133 140 6334	113 133 140 6474	113 133 140 6608	113 133 140 6685	112 133 139 6854	114 133 139 7199	115 133 139 7593	116 133 138 8035	117 133 138 8501							
27,000 lb **12,247 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 130 138 6030	113 130 138 6168	113 130 138 6305	113 130 138 6444	113 130 138 6577	112 130 137 6652	111 130 137 6690	110 130 137 6729	111 130 137 7044	112 130 136 7457	114 130 136 7902	115 130 135 8400						
26,000 lb **11,793 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 126 135 6010	113 126 135 6145	113 127 135 6281	113 127 135 6418	113 127 135 6550	112 127 135 6623	111 127 135 6658	110 127 134 6692	109 127 134 6754	108 127 134 6892	110 127 133 7303	111 127 133 7772	113 127 132 8338					
25,000 lb **11,340 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 123 133 5968	113 123 133 6102	113 123 133 6236	113 123 133 6371	113 123 133 6501	112 123 133 6572	111 123 132 6603	110 124 132 6634	109 124 132 6690	107 124 131 6649	105 124 131 6694	107 124 130 7125	109 124 129 7651					
24,000 lb **10,886 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 120 130 5921	113 120 130 6052	113 120 130 6184	113 120 130 6317	113 120 130 6446	112 120 130 6515	111 120 130 6543	110 120 129 6568	109 121 129 6619	107 121 129 6574	105 121 128 6512	103 121 127 6525	105 121 127 7009	106 121 126 7549				
23,000 lb **10,433 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 116 128 5871	113 116 128 6000	113 116 128 6130	113 116 128 6260	113 116 128 6387	112 116 128 6454	111 117 127 6479	110 117 127 6500	108 117 126 6545	107 118 126 6496	104 118 125 6430	102 118 125 6364	101 118 124 6369	102 118 123 6862	104 118 123 7412			
22,000 lb **9979 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 113 126 5821	113 113 126 5948	113 113 126 6076	113 113 126 6204	113 113 126 6329	112 113 126 6394	111 114 125 6416	109 114 125 6432	108 115 125 6472	106 115 124 6419	104 115 123 6349	102 115 123 6278	100 115 122 6220	99 115 121 6315	101 116 120 6828	102 116 120 7386		
21,000 lb **9525 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 126 5773	112 112 126 5898	112 112 126 6024	112 113 126 6150	112 112 126 6273	112 112 125 6336	111 111 123 6355	109 111 123 6367	108 112 122 6401	106 112 122 6344	104 112 121 6270	102 113 120 6195	100 113 120 6130	97 113 119 6043	97 113 118 6244	99 113 117 6761		
20,000 lb **9072 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 126 5727	112 112 126 5849	112 112 126 5973	112 112 126 6096	112 112 126 6218	112 112 125 6279	110 111 124 6294	109 109 122 6303	108 108 120 6330	106 109 120 6269	104 109 119 6192	102 109 118 6112	100 110 118 6041	97 110 117 5948	95 110 116 5865	95 110 116 6129		
19,000 lb **8618 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 127 5685	112 112 126 5805	112 112 126 5926	112 112 126 6048	112 112 126 6168	111 112 125 6227	110 110 124 6239	109 109 122 6243	108 108 120 6265	106 106 118 6200	104 106 117 6118	102 106 116 6034	100 107 115 5957	97 107 115 5858	95 107 114 5769	92 107 113 5646		
18,000 lb **8165 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 127 5649	112 112 127 5767	112 112 127 5886	112 112 127 6005	112 112 127 6124	111 111 126 6182	110 110 124 6190	109 109 122 6189	108 108 121 6205	106 106 118 6136	104 104 116 6051	102 103 114 5962	100 104 113 5879	97 104 112 5774	94 104 112 5677	92 105 111 5548		
17,000 lb **7711 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 127 5619	112 112 127 5735	112 112 127 5852	112 112 127 5969	112 112 127 6087	111 111 126 6142	110 110 124 6147	109 109 123 6142	108 108 121 6152	106 106 119 6079	104 104 116 5989	102 102 113 5896	99 100 111 5806	97 101 110 5695	94 101 109 5592	92 102 109 5456		

WET RUNWAY CONDITION

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Table 8

Flaps 15° **Field Pressure Altitude (7000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	113	113	112	113	114	115	116	117								
	V_R ~ KIAS	132	132	133	133	133	133	133	133	133	133								
	V_2 ~ KIAS	140	140	140	140	140	139	139	139	138	138								
	TOFL ~ FT	6230	6397	6572	6735	6802	7088	7404	7773	8180	8656								
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	113	113	112	110	110	111	112	114	115							
	V_R ~ KIAS	129	130	130	130	130	130	130	130	130	130	130							
	V_2 ~ KIAS	138	138	138	138	137	137	137	136	136	136	135							
	TOFL ~ FT	6209	6372	6543	6702	6740	6767	6871	7212	7591	8047	8517							
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	112	110	109	108	108	109	111	112						
	V_R ~ KIAS	126	126	127	127	127	127	127	127	127	127	127	127						
	V_2 ~ KIAS	136	135	135	135	135	135	134	134	134	133	133	132						
	TOFL ~ FT	6192	6351	6518	6673	6709	6734	6766	6780	7016	7437	7884	8379						
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	112	110	109	108	106	105	107	108	110					
	V_R ~ KIAS	123	123	123	123	123	123	124	124	124	124	124	124	124					
	V_2 ~ KIAS	133	133	133	133	132	132	132	131	131	131	130	130	129					
	TOFL ~ FT	6154	6309	6472	6622	6656	6677	6706	6716	6714	6819	7228	7694	8249					
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	111	110	109	108	106	105	103	104	106					
	V_R ~ KIAS	120	120	120	120	120	120	120	121	121	121	121	121	121					
	V_2 ~ KIAS	131	131	130	130	130	130	129	129	128	128	128	127	126					
	TOFL ~ FT	6109	6260	6418	6565	6595	6614	6640	6645	6639	6650	6622	7048	7567					
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	111	110	109	108	106	104	102	100	102	104				
	V_R ~ KIAS	116	116	116	116	116	117	117	117	117	118	118	118	118	118				
	V_2 ~ KIAS	128	128	128	128	127	127	127	126	126	125	125	124	124	123				
	TOFL ~ FT	6062	6209	6362	6504	6533	6549	6571	6572	6562	6567	6510	6463	6878	7413				
22,000 lb **9979 kg**	V_1 ~ KIAS	112	112	113	112	111	110	109	107	106	104	102	100	98	100	102			
	V_R ~ KIAS	113	113	113	113	114	114	114	115	115	115	115	115	115	116	116			
	V_2 ~ KIAS	126	126	126	126	125	125	125	124	124	123	123	122	121	121	120			
	TOFL ~ FT	6015	6157	6306	6444	6470	6483	6502	6499	6484	6484	6423	6371	6332	6828	7372			
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	112	111	110	109	107	106	104	102	100	98	96	98	100		
	V_R ~ KIAS	112	112	112	112	111	111	111	112	112	112	113	113	113	113	113	113		
	V_2 ~ KIAS	126	126	126	125	124	123	123	122	122	121	120	120	119	118	118	117		
	TOFL ~ FT	5970	6109	6253	6386	6410	6420	6436	6429	6409	6404	6339	6281	6218	6245	6748	7300		
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	111	110	109	107	106	104	102	100	98	95	94	96		
	V_R ~ KIAS	112	112	112	112	111	110	109	108	109	109	109	110	110	110	110	110		
	V_2 ~ KIAS	127	126	126	126	124	123	121	120	119	119	118	118	117	117	116	115		
	TOFL ~ FT	5926	6061	6200	6328	6350	6358	6370	6360	6335	6325	6256	6193	6124	6041	6113	6624		
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	111	110	108	107	105	104	102	100	98	95	93	92		
	V_R ~ KIAS	112	112	112	112	111	110	109	107	106	106	106	107	107	107	107	107		
	V_2 ~ KIAS	127	127	126	126	125	123	121	120	118	117	116	115	115	114	114	113		
	TOFL ~ FT	5888	6018	6153	6276	6296	6301	6310	6295	6266	6251	6177	6110	6034	5945	5835	5980		
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	111	109	108	107	105	104	102	100	98	95	93	90		
	V_R ~ KIAS	112	112	112	112	111	109	108	107	105	104	103	104	104	104	105	105		
	V_2 ~ KIAS	127	127	127	126	125	123	122	120	118	116	114	113	113	112	111	110		
	TOFL ~ FT	5855	5981	6111	6230	6248	6250	6256	6237	6203	6182	6104	6032	5950	5854	5738	5611		
17,000 lb **7711 kg**	V_1 ~ KIAS	111	111	112	111	110	109	108	107	105	104	102	100	98	95	92	90		
	V_R ~ KIAS	111	112	112	112	110	109	108	107	105	104	102	100	101	101	102	102		
	V_2 ~ KIAS	128	127	127	126	125	124	122	120	118	116	114	111	110	110	109	108		
	TOFL ~ FT	5829	5951	6076	6191	6207	6206	6208	6185	6147	6120	6038	5960	5872	5769	5647	5514		

WET RUNWAY CONDITION

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Table 9

Flaps 15° **Field Pressure Altitude (8000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	112	113	114	114	115	116	117									
	V_R ~ KIAS	132	133	133	133	133	133	133	133	133									
	V_2 ~ KIAS	140	140	140	139	139	139	139	138	138									
	TOFL ~ FT	6543	6723	6813	7042	7342	7665	8000	8401	8847									
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	112	111	110	110	111	112	114	115								
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130								
	V_2 ~ KIAS	138	138	137	137	137	137	136	136	136	135								
	TOFL ~ FT	6517	6692	6779	6824	6859	7113	7425	7801	8224	8689								
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	112	111	110	109	107	108	110	111	112							
	V_R ~ KIAS	126	126	127	127	127	127	127	127	127	127	127							
	V_2 ~ KIAS	135	135	135	135	134	134	134	133	133	133	132							
	TOFL ~ FT	6496	6667	6749	6791	6822	6844	6868	7212	7604	8044	8513							
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	112	111	110	108	107	106	105	107	108	109						
	V_R ~ KIAS	123	123	123	123	124	124	124	124	124	124	124	124						
	V_2 ~ KIAS	133	133	133	132	132	132	131	131	131	130	130	129						
	TOFL ~ FT	6452	6618	6697	6736	6764	6782	6791	6819	6972	7376	7820	8308						
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	112	111	110	108	107	106	105	103	104	105	107					
	V_R ~ KIAS	120	120	120	120	120	120	121	121	121	121	121	121	121					
	V_2 ~ KIAS	131	130	130	130	129	129	129	128	128	128	127	127	126					
	TOFL ~ FT	6402	6563	6638	6673	6698	6714	6719	6743	6797	6760	7165	7617	8174					
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	112	111	109	108	107	106	105	103	101	101	102					
	V_R ~ KIAS	116	116	116	117	117	117	117	117	118	118	118	118	118					
	V_2 ~ KIAS	128	128	127	127	127	126	126	126	125	125	124	124	124					
	TOFL ~ FT	6349	6505	6576	6608	6630	6642	6645	6664	6712	6671	6633	6924	7514					
22,000 lb 9979 kg	V_1 ~ KIAS	112	113	112	111	109	108	107	106	104	103	101	99	100	101				
	V_R ~ KIAS	113	113	113	114	114	114	115	115	115	115	115	115	116	116				
	V_2 ~ KIAS	126	126	126	125	125	124	124	124	123	123	122	121	121	120				
	TOFL ~ FT	6296	6448	6515	6543	6562	6572	6571	6586	6628	6583	6540	6492	6854	7389				
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	110	109	108	107	105	104	102	101	99	96	98	100			
	V_R ~ KIAS	112	112	112	111	111	111	112	112	112	113	113	113	113	113	113			
	V_2 ~ KIAS	126	126	125	123	123	122	122	121	121	121	120	119	119	118	117			
	TOFL ~ FT	6246	6392	6455	6481	6497	6503	6500	6510	6546	6497	6449	6396	6335	6762	7306			
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	111	110	109	108	107	105	104	102	101	98	96	94	96			
	V_R ~ KIAS	112	112	112	110	109	108	108	109	109	110	110	110	110	110	110			
	V_2 ~ KIAS	126	126	125	123	122	120	120	119	119	118	118	117	117	116	115			
	TOFL ~ FT	6197	6338	6397	6419	6432	6436	6430	6435	6466	6411	6359	6301	6234	6132	6626			
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	111	110	109	108	106	105	104	102	100	98	96	94	91			
	V_R ~ KIAS	112	112	111	110	109	108	107	105	106	106	107	107	107	107	107			
	V_2 ~ KIAS	127	126	125	124	122	121	119	117	117	116	116	115	114	114	113			
	TOFL ~ FT	6153	6289	6344	6363	6373	6373	6364	6365	6390	6331	6275	6211	6137	6026	5980			
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	111	110	109	108	106	105	104	102	100	98	96	93	91			
	V_R ~ KIAS	112	112	111	110	109	108	106	105	104	103	104	104	104	105	105			
	V_2 ~ KIAS	127	127	125	124	122	121	119	117	116	114	114	113	112	111	111			
	TOFL ~ FT	6115	6246	6297	6313	6319	6317	6305	6301	6320	6257	6196	6127	6046	5929	5819			
17,000 lb 7711 kg	V_1 ~ KIAS	111	112	111	110	109	107	106	105	104	102	100	98	96	93	91			
	V_R ~ KIAS	112	112	111	110	109	107	106	105	104	102	101	101	101	102	102			
	V_2 ~ KIAS	127	127	126	124	123	121	119	118	116	114	112	111	110	109	108			
	TOFL ~ FT	6084	6210	6258	6269	6273	6267	6253	6244	6257	6189	6123	6050	5961	5838	5722			

WET RUNWAY CONDITION

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Table 10

Flaps 15° **Field Pressure Altitude (9000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	113	112	113	114	115	116	117											
	V_R ~ KIAS	133	133	133	133	133	133	133											
	V_2 ~ KIAS	140	140	139	139	139	138	138											
	TOFL ~ FT	6858	6968	7282	7608	7935	8278	8638											
27,000 lb 12,247 kg	V_1 ~ KIAS	113	112	110	110	111	112	113	114										
	V_R ~ KIAS	130	130	130	130	130	130	130	130										
	V_2 ~ KIAS	137	137	137	137	136	136	136	135										
	TOFL ~ FT	6824	6863	6904	7062	7365	7687	8026	8427										
26,000 lb 11,793 kg	V_1 ~ KIAS	113	111	110	109	108	108	109	110	111	112								
	V_R ~ KIAS	127	127	127	127	127	127	127	127	127	127								
	V_2 ~ KIAS	135	135	135	134	134	134	133	133	133	132								
	TOFL ~ FT	6796	6831	6869	6901	6922	7109	7421	7794	8210	8680								
25,000 lb 11,340 kg	V_1 ~ KIAS	113	111	110	109	108	106	105	106	107	108	109							
	V_R ~ KIAS	123	123	124	124	124	124	124	124	124	124	124							
	V_2 ~ KIAS	133	132	132	132	131	131	131	130	130	130	129							
	TOFL ~ FT	6744	6777	6811	6840	6858	6868	6894	7147	7529	7973	8439							
24,000 lb 10,886 kg	V_1 ~ KIAS	113	111	110	109	108	106	105	104	103	104	105	107						
	V_R ~ KIAS	120	120	120	120	121	121	121	121	121	121	121	121						
	V_2 ~ KIAS	130	130	130	129	129	129	128	128	127	127	127	126						
	TOFL ~ FT	6685	6715	6747	6772	6787	6795	6816	6827	6900	7306	7738	8235						
23,000 lb 10,433 kg	V_1 ~ KIAS	112	111	110	109	107	106	105	104	102	101	101	103	104					
	V_R ~ KIAS	116	117	117	117	117	117	117	118	118	118	118	118	118					
	V_2 ~ KIAS	128	127	127	127	126	126	125	125	125	124	124	123	122					
	TOFL ~ FT	6623	6651	6679	6701	6713	6718	6736	6743	6751	6773	7035	7554	8047					
22,000 lb 9979 kg	V_1 ~ KIAS	112	111	110	109	107	106	105	104	102	101	99	99	101	102				
	V_R ~ KIAS	113	114	114	114	114	115	115	115	115	115	115	115	116	116				
	V_2 ~ KIAS	126	125	125	125	124	124	124	123	123	122	122	121	120	120				
	TOFL ~ FT	6562	6587	6612	6631	6640	6642	6657	6659	6662	6678	6638	6898	7431	7994				
21,000 lb 9525 kg	V_1 ~ KIAS	112	111	110	109	107	106	105	103	102	101	99	97	97	99				
	V_R ~ KIAS	112	111	111	111	111	112	112	112	113	113	113	113	113	113				
	V_2 ~ KIAS	125	124	123	123	122	122	121	121	120	120	119	119	118	117				
	TOFL ~ FT	6503	6525	6547	6563	6569	6568	6580	6578	6575	6586	6541	6486	6786	7323				
20,000 lb 9072 kg	V_1 ~ KIAS	112	111	110	108	107	106	105	103	102	101	99	97	94	95	97			
	V_R ~ KIAS	112	111	110	108	108	108	109	109	109	110	110	110	110	110	110			
	V_2 ~ KIAS	125	124	122	121	120	120	119	119	118	118	117	117	116	116	115			
	TOFL ~ FT	6445	6465	6483	6496	6499	6495	6504	6497	6490	6495	6445	6385	6316	6639	7173			
19,000 lb 8618 kg	V_1 ~ KIAS	112	111	109	108	107	106	105	103	102	100	99	96	94	92	93			
	V_R ~ KIAS	112	111	110	108	107	106	105	106	106	107	107	107	107	107	107			
	V_2 ~ KIAS	126	124	123	121	120	118	117	117	116	116	115	114	114	113	113			
	TOFL ~ FT	6393	6409	6425	6435	6435	6428	6433	6422	6410	6409	6355	6289	6213	6121	6472			
18,000 lb 8165 kg	V_1 ~ KIAS	112	110	109	108	107	106	104	103	102	100	98	96	94	92	89			
	V_R ~ KIAS	112	111	109	108	107	106	104	103	103	104	104	104	105	105	105			
	V_2 ~ KIAS	126	124	123	121	120	118	117	115	114	114	113	112	112	111	110			
	TOFL ~ FT	6347	6361	6373	6379	6376	6367	6369	6353	6335	6329	6270	6198	6116	6017	5916			
17,000 lb 7711 kg	V_1 ~ KIAS	111	110	109	108	107	105	104	103	101	100	98	96	94	92	89			
	V_R ~ KIAS	111	110	109	108	107	105	104	103	102	101	101	101	102	102	102			
	V_2 ~ KIAS	126	125	123	122	120	118	117	115	113	112	111	110	109	109	108			
	TOFL ~ FT	6307	6319	6328	6331	6325	6312	6311	6291	6268	6255	6192	6114	6025	5919	5812			

WET RUNWAY CONDITION

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Table 11

Flaps 15° **Field Pressure Altitude (10,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 133 139 7241	114 133 139 7544	115 133 139 7879	115 133 139 8226	116 133 138 8578	117 133 138 8946												
27,000 lb 12,247 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 130 137 6952	110 130 137 7003	111 130 136 7313	112 130 136 7638	112 130 136 7970	113 130 136 8316	114 130 135 8677											
26,000 lb 11,793 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 127 135 6917	110 127 134 6948	108 127 134 6980	108 127 134 7066	108 127 133 7371	109 127 133 7692	110 127 133 8026	111 127 133 8440										
25,000 lb 11,340 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 124 132 6859	109 124 132 6888	108 124 131 6916	107 124 131 6939	106 124 131 6957	105 124 131 7057	106 124 130 7362	107 124 130 7745	108 124 130 8157	109 124 129 8625								
24,000 lb 10,886 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 120 130 6795	109 120 129 6821	108 121 129 6846	107 121 129 6865	106 121 128 6880	104 121 128 6899	103 121 128 6908	103 121 127 7100	104 121 127 7476	105 121 127 7910	106 121 126 8378							
23,000 lb 10,433 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 117 127 6727	109 117 127 6750	108 117 126 6772	107 117 126 6789	106 117 126 6801	104 117 125 6816	103 117 125 6823	102 118 125 6863	101 118 124 6923	101 118 124 7192	103 118 123 7675	104 118 123 8110						
22,000 lb 9979 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 114 125 6660	109 114 125 6680	108 114 124 6699	107 115 124 6713	105 115 124 6721	104 115 123 6734	103 115 123 6737	102 115 122 6773	101 115 122 6826	99 115 122 6800	99 116 121 7020	100 116 120 7475	102 116 120 8041					
21,000 lb 9525 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 111 123 6596	109 111 123 6613	108 111 122 6629	107 112 122 6639	105 112 121 6645	104 112 121 6654	103 112 121 6655	102 113 120 6685	101 113 120 6732	99 113 119 6701	97 113 119 6653	97 113 118 6840	99 113 118 7366	100 113 117 7930				
20,000 lb 9072 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 110 123 6532	109 109 121 6547	108 108 120 6560	106 108 120 6567	105 109 119 6570	104 109 119 6576	103 109 119 6573	102 110 118 6598	101 110 118 6639	99 110 117 6603	97 110 117 6550	95 110 116 6494	95 110 116 6679	96 110 115 7216	98 110 115 7757			
19,000 lb 8618 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 110 123 6474	109 109 122 6487	108 108 120 6496	106 106 119 6500	105 105 117 6500	104 106 117 6503	103 106 116 6497	101 106 116 6517	100 107 116 6551	99 107 115 6511	97 107 115 6452	95 107 114 6391	93 107 113 6321	92 108 113 6496	94 108 112 7008			
18,000 lb 8165 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 110 123 6422	109 109 122 6432	107 107 120 6439	106 106 119 6439	105 105 117 6436	104 104 116 6436	102 103 114 6427	101 103 114 6441	100 104 114 6470	99 104 113 6424	97 104 112 6361	95 105 112 6293	92 105 111 6216	90 105 110 6132	90 105 110 6306			
17,000 lb 7711 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 110 124 6378	108 108 122 6385	107 107 121 6388	106 106 119 6386	105 105 118 6379	104 104 116 6376	102 102 114 6364	101 101 113 6373	100 101 112 6395	98 101 111 6344	97 101 110 6276	95 102 109 6203	92 102 109 6118	90 102 108 6027	88 102 107 5907			

WET RUNWAY CONDITION

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Table 12

Flaps 15°　　Field Pressure Altitude (11,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	114	115	116	117														
	V_R ~ KIAS	133	133	133	133														
	V_2 ~ KIAS	139	139	138	138														
	TOFL ~ FT	7844	8168	8524	8898														
27,000 lb 12,247 kg	V_1 ~ KIAS	110	111	112	113	114													
	V_R ~ KIAS	130	130	130	130	130													
	V_2 ~ KIAS	137	136	136	136	135													
	TOFL ~ FT	7282	7584	7919	8271	8625													
26,000 lb 11,793 kg	V_1 ~ KIAS	109	107	108	109	110	110	111											
	V_R ~ KIAS	127	127	127	127	127	127	127											
	V_2 ~ KIAS	134	134	134	133	133	133	132											
	TOFL ~ FT	7009	7040	7324	7651	7976	8322	8689											
25,000 lb 11,340 kg	V_1 ~ KIAS	109	107	106	105	106	106	107	108										
	V_R ~ KIAS	124	124	124	124	124	124	124	124										
	V_2 ~ KIAS	132	131	131	131	130	130	130	129										
	TOFL ~ FT	6946	6974	7004	7035	7318	7636	7975	8382										
24,000 lb 10,886 kg	V_1 ~ KIAS	108	107	106	105	104	102	103	104	105	106								
	V_R ~ KIAS	121	121	121	121	121	121	121	121	121	121								
	V_2 ~ KIAS	129	129	128	128	128	127	127	127	127	126								
	TOFL ~ FT	6876	6901	6928	6955	6972	7003	7314	7687	8089	8556								
23,000 lb 10,433 kg	V_1 ~ KIAS	108	107	106	105	103	102	101	100	101	103	104							
	V_R ~ KIAS	117	117	117	117	117	118	118	118	118	118	118							
	V_2 ~ KIAS	126	126	126	125	125	125	124	124	124	123	123							
	TOFL ~ FT	6803	6826	6849	6873	6887	6903	6932	6994	7356	7834	8253							
22,000 lb 9979 kg	V_1 ~ KIAS	108	107	106	105	103	102	101	100	98	99	100	102						
	V_R ~ KIAS	114	115	115	115	115	115	115	115	115	116	116	116						
	V_2 ~ KIAS	125	124	124	123	123	123	122	122	121	121	120	120						
	TOFL ~ FT	6730	6750	6771	6791	6802	6815	6840	6868	6888	7172	7608	8106						
21,000 lb 9525 kg	V_1 ~ KIAS	108	107	106	105	103	102	101	100	98	97	97	98	100					
	V_R ~ KIAS	111	112	112	112	112	112	112	113	113	113	113	113	113					
	V_2 ~ KIAS	122	122	122	121	121	120	120	120	119	119	118	118	117					
	TOFL ~ FT	6660	6678	6695	6712	6720	6729	6751	6774	6788	6790	6963	7425	7969					
20,000 lb 9072 kg	V_1 ~ KIAS	108	107	106	104	103	102	101	100	98	97	95	94	96	97				
	V_R ~ KIAS	108	108	109	109	109	109	110	110	110	110	110	110	110	110				
	V_2 ~ KIAS	120	120	119	119	119	118	118	118	117	117	116	116	115	115				
	TOFL ~ FT	6591	6606	6620	6634	6639	6645	6663	6681	6689	6686	6641	6733	7249	7768				
19,000 lb 8618 kg	V_1 ~ KIAS	108	107	105	104	103	102	101	100	98	97	95	93	92	93				
	V_R ~ KIAS	108	107	106	106	106	106	106	107	107	107	107	107	108	108				
	V_2 ~ KIAS	120	119	118	117	116	116	116	115	115	115	114	114	113	112				
	TOFL ~ FT	6528	6540	6551	6561	6563	6566	6580	6593	6596	6586	6537	6472	6528	7038				
18,000 lb 8165 kg	V_1 ~ KIAS	108	107	105	104	103	102	101	99	98	97	95	93	91	89				
	V_R ~ KIAS	108	107	105	104	103	103	103	104	104	104	105	105	105	105				
	V_2 ~ KIAS	121	119	118	116	115	114	114	113	113	112	112	111	111	110				
	TOFL ~ FT	6471	6481	6488	6495	6494	6493	6504	6511	6509	6493	6439	6367	6296	6315				
17,000 lb 7711 kg	V_1 ~ KIAS	107	106	105	104	103	102	100	99	98	96	95	93	90	88				
	V_R ~ KIAS	108	106	105	104	103	102	101	100	101	101	102	102	102	102				
	V_2 ~ KIAS	121	120	118	116	115	113	112	111	111	110	110	109	108	107				
	TOFL ~ FT	6421	6428	6432	6436	6431	6428	6435	6437	6428	6407	6347	6270	6191	6098				

WET RUNWAY CONDITION

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Table 13

Flaps 15° **Field Pressure Altitude (12,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	116	117																
	V_R ~ KIAS	133	133																
	V_2 ~ KIAS	138	138																
	TOFL ~ FT	8587	8937																
27,000 lb 12,247 kg	V_1 ~ KIAS	112	113	113	114														
	V_R ~ KIAS	130	130	130	130														
	V_2 ~ KIAS	136	136	136	135														
	TOFL ~ FT	7978	8306	8664	9051														
26,000 lb 11,793 kg	V_1 ~ KIAS	108	109	109	110	111													
	V_R ~ KIAS	127	127	127	127	127													
	V_2 ~ KIAS	134	133	133	133	132													
	TOFL ~ FT	7381	7683	8017	8377	8730													
25,000 lb 11,340 kg	V_1 ~ KIAS	107	105	105	106	107	108												
	V_R ~ KIAS	124	124	124	124	124	124												
	V_2 ~ KIAS	131	131	130	130	130	130												
	TOFL ~ FT	7124	7155	7356	7688	8014	8361												
24,000 lb 10,886 kg	V_1 ~ KIAS	106	105	104	103	103	104	105	106										
	V_R ~ KIAS	121	121	121	121	121	121	121	121										
	V_2 ~ KIAS	129	128	128	128	127	127	127	126										
	TOFL ~ FT	7047	7075	7099	7125	7351	7668	7996	8415										
23,000 lb 10,433 kg	V_1 ~ KIAS	106	105	104	103	102	100	100	102	102	104								
	V_R ~ KIAS	117	117	118	118	118	118	118	118	118	118								
	V_2 ~ KIAS	126	126	125	125	125	124	124	124	123	123								
	TOFL ~ FT	6967	6992	7013	7035	7065	7096	7280	7658	8113	8527								
22,000 lb 9979 kg	V_1 ~ KIAS	106	105	104	103	101	100	99	98	99	100	102							
	V_R ~ KIAS	115	115	115	115	115	115	115	115	116	116	116							
	V_2 ~ KIAS	124	124	123	123	122	122	122	121	121	120	120							
	TOFL ~ FT	6888	6910	6928	6946	6973	7000	7029	7078	7431	7863	8334							
21,000 lb 9525 kg	V_1 ~ KIAS	106	105	104	103	101	100	99	98	97	97	98	98						
	V_R ~ KIAS	112	112	112	112	112	113	113	113	113	113	113	113						
	V_2 ~ KIAS	122	121	121	121	120	120	120	119	119	118	118	117						
	TOFL ~ FT	6811	6830	6845	6860	6883	6907	6933	6975	7010	7197	7635	8138						
20,000 lb 9072 kg	V_1 ~ KIAS	106	105	104	102	101	100	99	98	97	95	94	95	97					
	V_R ~ KIAS	109	109	109	109	109	110	110	110	110	110	110	110	110					
	V_2 ~ KIAS	120	119	119	118	118	118	118	117	117	116	116	115	115					
	TOFL ~ FT	6735	6752	6763	6775	6794	6814	6837	6873	6902	6873	6926	7384	7904					
19,000 lb 8618 kg	V_1 ~ KIAS	106	105	104	102	101	100	99	98	97	95	93	91	93	94				
	V_R ~ KIAS	106	106	106	106	106	107	107	107	107	107	107	108	108	108				
	V_2 ~ KIAS	118	117	117	116	116	116	115	115	115	114	114	113	113	112				
	TOFL ~ FT	6665	6679	6688	6696	6712	6728	6747	6777	6800	6765	6707	6667	7138	7651				
18,000 lb 8165 kg	V_1 ~ KIAS	106	105	103	102	101	100	99	98	97	95	93	91	89	90				
	V_R ~ KIAS	106	105	104	103	103	103	104	104	104	105	105	105	105	105				
	V_2 ~ KIAS	118	117	115	114	114	113	113	113	112	112	111	111	110	110				
	TOFL ~ FT	6602	6613	6618	6623	6635	6648	6663	6687	6704	6664	6600	6536	6465	6888				
17,000 lb 7711 kg	V_1 ~ KIAS	106	104	103	102	101	100	99	98	96	95	93	91	89	87				
	V_R ~ KIAS	106	104	103	102	101	100	100	101	101	102	102	102	102	102				
	V_2 ~ KIAS	118	117	115	114	113	111	111	110	110	110	109	108	108	107				
	TOFL ~ FT	6546	6554	6556	6557	6566	6575	6586	6605	6615	6569	6500	6430	6352	6270				

WET RUNWAY CONDITION

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Table 14

Flaps 15°   Field Pressure Altitude (13,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS																		
	V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL ~ FT																		
27,000 lb 12,247 kg	V_1 ~ KIAS																		
	V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL ~ FT																		
26,000 lb 11,793 kg	V_1 ~ KIAS	109	110	111															
	V_R ~ KIAS	127	127	127															
	V_2 ~ KIAS	133	133	133															
	TOFL ~ FT	8153	8488	8856															
25,000 lb 11,340 kg	V_1 ~ KIAS	105	106	107	108	108													
	V_R ~ KIAS	124	124	124	124	124													
	V_2 ~ KIAS	131	130	130	130	129													
	TOFL ~ FT	7483	7789	8129	8495	8854													
24,000 lb 10,886 kg	V_1 ~ KIAS	104	103	103	104	104	105												
	V_R ~ KIAS	121	121	121	121	121	121												
	V_2 ~ KIAS	128	128	127	127	127	127												
	TOFL ~ FT	7281	7311	7455	7795	8123	8467												
23,000 lb 10,433 kg	V_1 ~ KIAS	104	103	102	101	100	101	102	103										
	V_R ~ KIAS	118	118	118	118	118	118	118	118										
	V_2 ~ KIAS	125	125	125	124	124	124	123	123										
	TOFL ~ FT	7194	7220	7253	7295	7393	7703	8044	8453										
22,000 lb 9979 kg	V_1 ~ KIAS	104	103	102	101	100	99	98	99	100	101								
	V_R ~ KIAS	115	115	115	115	115	115	115	115	115	116								
	V_2 ~ KIAS	123	123	123	122	122	121	121	121	120	120								
	TOFL ~ FT	7106	7130	7160	7197	7230	7259	7418	7788	8206	8685								
21,000 lb 9525 kg	V_1 ~ KIAS	104	103	102	101	100	98	97	96	97	98	99							
	V_R ~ KIAS	112	112	112	113	113	113	113	113	113	113	113							
	V_2 ~ KIAS	121	121	120	120	120	119	119	119	118	118	117							
	TOFL ~ FT	7022	7043	7069	7103	7132	7157	7173	7200	7512	7958	8449							
20,000 lb 9072 kg	V_1 ~ KIAS	104	103	102	101	99	98	97	96	95	94	95	97						
	V_R ~ KIAS	109	109	109	110	110	110	110	110	110	110	110	110						
	V_2 ~ KIAS	119	119	118	118	118	117	117	117	116	116	116	115						
	TOFL ~ FT	6939	6957	6980	7009	7034	7056	7068	7090	7110	7220	7660	8153						
19,000 lb 8618 kg	V_1 ~ KIAS	104	103	102	100	99	98	97	96	95	93	91	92	94					
	V_R ~ KIAS	106	106	106	107	107	107	107	107	107	107	107	108	108					
	V_2 ~ KIAS	117	116	116	116	115	115	115	114	114	114	113	113	112					
	TOFL ~ FT	6862	6877	6896	6921	6943	6961	6969	6985	6999	6982	6934	7363	7871					
18,000 lb 8165 kg	V_1 ~ KIAS	104	103	101	100	99	98	97	96	94	93	91	89	90					
	V_R ~ KIAS	104	103	103	103	104	104	104	104	105	105	105	105	105					
	V_2 ~ KIAS	116	114	114	114	113	113	112	112	112	111	111	110	110					
	TOFL ~ FT	6791	6803	6819	6840	6858	6872	6876	6887	6895	6872	6818	6751	7087					
17,000 lb 7711 kg	V_1 ~ KIAS	104	102	101	100	99	98	97	96	94	93	91	89	87					
	V_R ~ KIAS	104	102	101	101	100	101	101	101	102	102	102	102	102					
	V_2 ~ KIAS	116	114	113	112	111	111	110	110	109	109	108	108	107					
	TOFL ~ FT	6728	6738	6750	6766	6781	6791	6792	6796	6798	6768	6709	6636	6557					

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Table 15

Flaps 15° **Field Pressure Altitude (14,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS																		
	V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL ~ FT																		
27,000 lb **12,247 kg**	V_1 ~ KIAS																		
	V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL ~ FT																		
26,000 lb **11,793 kg**	V_1 ~ KIAS																		
	V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL ~ FT																		
25,000 lb **11,340 kg**	V_1 ~ KIAS	107	107	108															
	V_R ~ KIAS	124	124	124															
	V_2 ~ KIAS	130	130	129															
	TOFL ~ FT	8277	8615	8989															
24,000 lb **10,886 kg**	V_1 ~ KIAS	103	103	104	105	106													
	V_R ~ KIAS	121	121	121	121	121													
	V_2 ~ KIAS	128	127	127	127	126													
	TOFL ~ FT	7592	7901	8250	8621	8975													
23,000 lb **10,433 kg**	V_1 ~ KIAS	102	101	100	101	101	102	103											
	V_R ~ KIAS	118	118	118	118	118	118	118											
	V_2 ~ KIAS	125	124	124	124	123	123	123											
	TOFL ~ FT	7452	7486	7530	7846	8168	8519	8895											
22,000 lb **9979 kg**	V_1 ~ KIAS	102	101	100	99	98	99	100	101										
	V_R ~ KIAS	115	115	115	115	115	115	115	115										
	V_2 ~ KIAS	123	122	122	122	121	121	121	120										
	TOFL ~ FT	7356	7387	7426	7469	7534	7856	8206	8625										
21,000 lb **9525 kg**	V_1 ~ KIAS	102	101	100	99	98	97	96	97	98	99								
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113								
	V_2 ~ KIAS	120	120	120	119	119	119	119	118	118	117								
	TOFL ~ FT	7263	7291	7327	7365	7384	7408	7519	7903	8329	8813								
20,000 lb **9072 kg**	V_1 ~ KIAS	102	101	100	99	98	96	95	94	94	95	96							
	V_R ~ KIAS	109	110	110	110	110	110	110	110	110	110	110							
	V_2 ~ KIAS	118	118	118	117	117	117	117	116	116	116	115							
	TOFL ~ FT	7172	7197	7228	7262	7277	7298	7331	7388	7558	7997	8475							
19,000 lb **8618 kg**	V_1 ~ KIAS	102	101	100	99	97	96	95	94	93	91	92	94	95					
	V_R ~ KIAS	106	107	107	107	107	107	107	107	107	108	108	108	108					
	V_2 ~ KIAS	116	116	115	115	115	115	114	114	114	113	113	112	112					
	TOFL ~ FT	7086	7108	7135	7164	7177	7193	7222	7272	7278	7246	7656	8131	8668					
18,000 lb **8165 kg**	V_1 ~ KIAS	102	101	100	99	97	96	95	94	93	91	89	90	91					
	V_R ~ KIAS	103	103	104	104	104	104	104	105	105	105	105	105	105					
	V_2 ~ KIAS	114	114	113	113	113	112	112	112	111	111	110	110	109					
	TOFL ~ FT	7007	7026	7049	7074	7083	7096	7120	7163	7163	7125	7066	7326	7812					
17,000 lb **7711 kg**	V_1 ~ KIAS	102	101	99	98	97	96	95	94	93	91	89	87	87					
	V_R ~ KIAS	102	101	100	101	101	101	101	102	102	102	102	102	102					
	V_2 ~ KIAS	113	112	111	111	110	110	110	109	109	108	108	107	106					
	TOFL ~ FT	6937	6952	6971	6992	6997	7006	7026	7062	7055	7011	6946	6862	6999					

WET RUNWAY CONDITION

RGACTO002C

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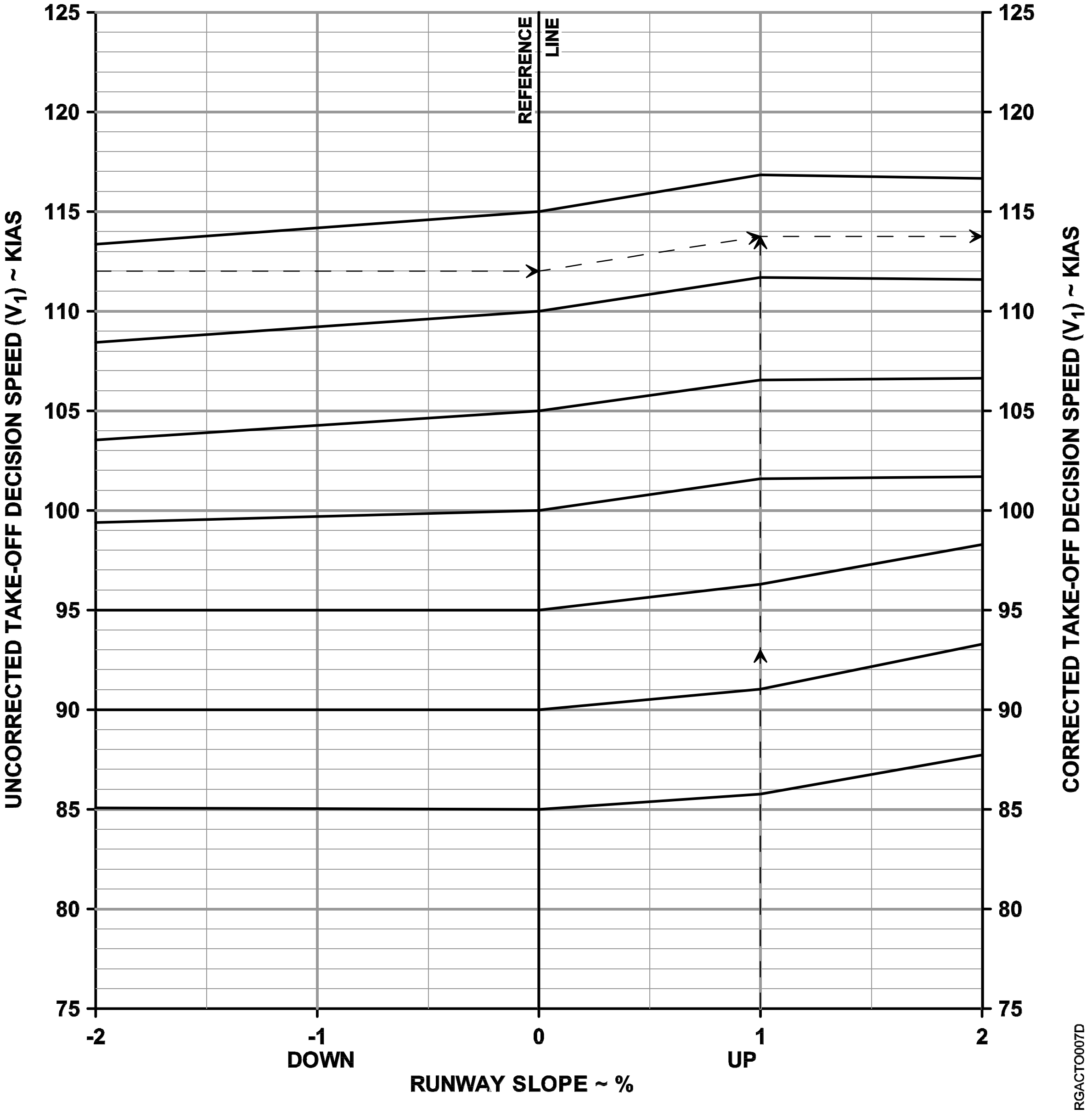
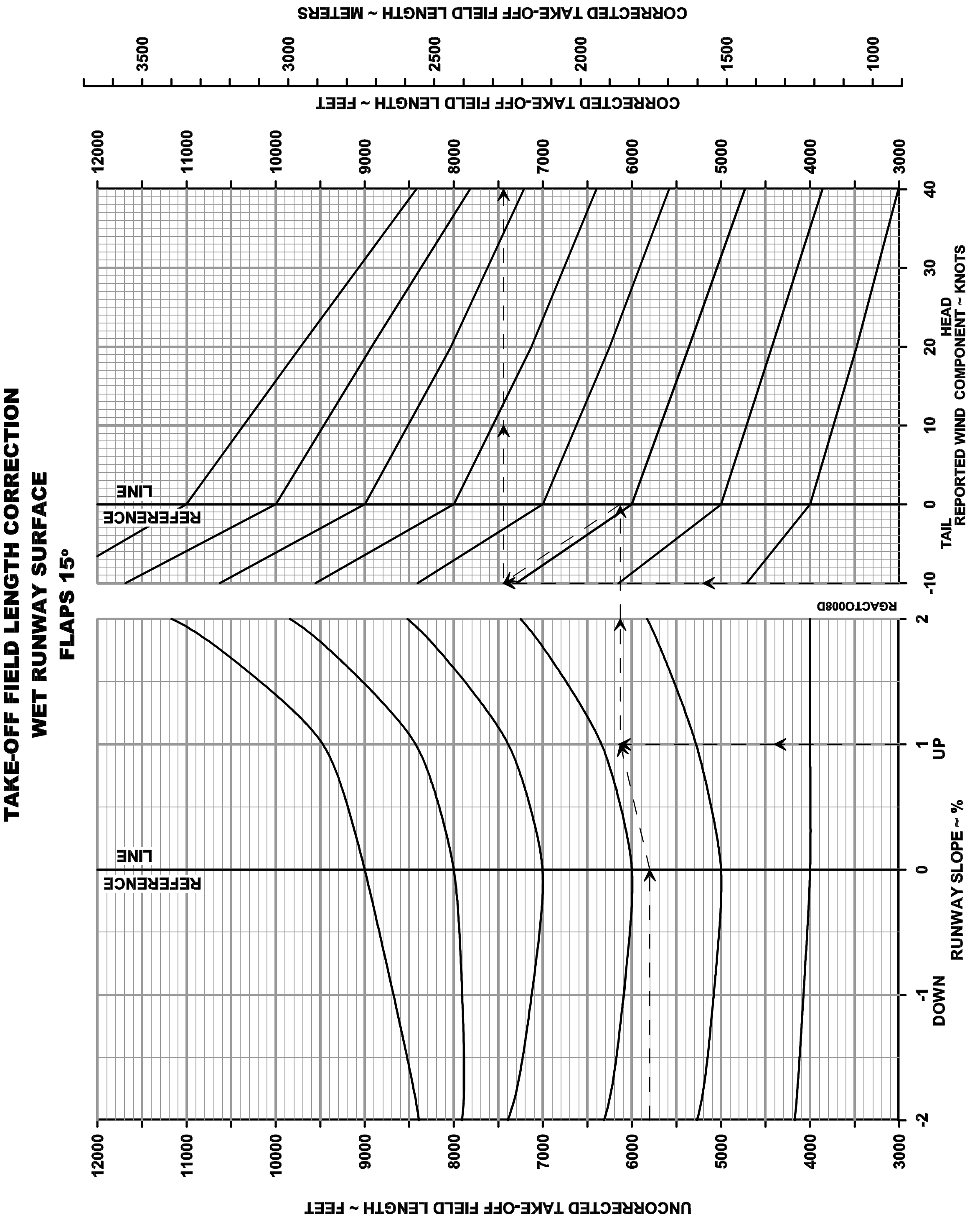
TAKE-OFF DECISION SPEED (V_1) CORRECTION
WET RUNWAY SURFACE
FLAPS 15°



Take-Off Decision Speed (V_1) - Wet Runway (Flaps 15°)

Corrected for Runway Gradient

Figure 1



Take-Off Field Length - Wet Runway (Flaps 15°)

Corrected for Runway Gradient and Wind Component

Figure 2

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INTRODUCTION - WEIGHT, ALTITUDE and TEMPERATURE DATA

This chart contains weight, altitude and temperature (WAT) data which limit the take-off weight of the airplane, from a consideration of airworthiness climb requirements.

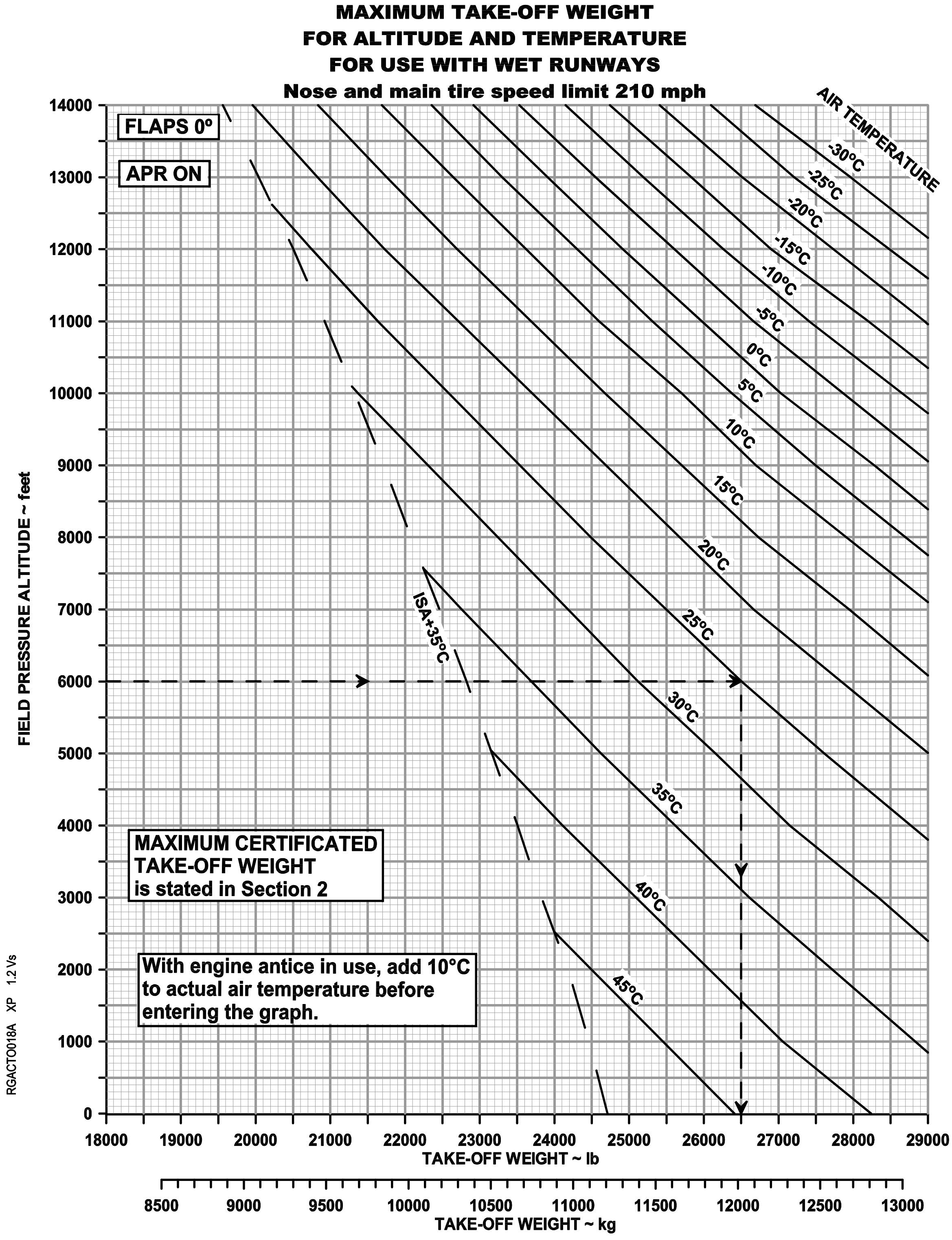
INSTRUCTIONS FOR USE OF CHART

To Determine the WAT Limit Required

- Enter the chart from the left with field pressure altitude. Move across to the air temperature.
- From the intersection of the air temperature and field pressure altitude, move down to read the maximum allowable take-off weight, from the bottom scale.

NOTES:

1. To obtain the effect of engine antice on climb gradient, add 10° C to the actual air temperature before entering the chart.
2. The maximum weight determined by other considerations such as available take-off field length must also be checked.


MAXIMUM TAKE-OFF WEIGHT
FOR ALTITUDE AND TEMPERATURE
FOR USE WITH WET RUNWAYS
Nose and main tire speed limit 210 mph

MAXIMUM CERTIFICATED TAKE-OFF WEIGHT is stated in Section 2

With engine antice in use, add 10°C to actual air temperature before entering the graph.

Figure 2A

Maximum Take-off Weight for Altitude and Temperature for Use with Wet Runways

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Table 16

Flaps 0° **Field Pressure Altitude (Sea Level)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	117	117	117	117	117	117	117	117	117	117	117	117	120	122	125	128	131	
	V_R ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	139	139	140	141	141	
	V_2 ~ KIAS	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	
	TOFL ~ FT	5141	5220	5305	5394	5487	5582	5680	5780	5885	5997	6092	6290	6778	7380	8066	8917	9960	
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	114	116	119	122	125	128	131
	V_R ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	136	137	138	139	139	140
	V_2 ~ KIAS	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142
	TOFL ~ FT	4829	4903	4987	5075	5164	5254	5345	5436	5528	5633	5722	5906	6357	6931	7578	8348	9287	10399
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	112	115	118	121	124	128
	V_R ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	134	135	135	136	137	138
	V_2 ~ KIAS	141	141	141	141	141	140	140	140	140	140	140	140	140	140	140	140	140	140
	TOFL ~ FT	4787	4872	4958	5045	5134	5223	5313	5404	5495	5589	5679	5800	5935	6469	7086	7784	8633	9618
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	112	111	114	117	120	123
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	131	132	132	133	134	135
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	137	137	137	137	137	137	137
	TOFL ~ FT	4743	4827	4912	4999	5087	5176	5265	5354	5444	5537	5626	5743	5813	5949	6518	7174	7916	8775
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	112	108	109	113	116	119
	V_R ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	127	127	128	129	130	131	131
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	134	134	134	134	134	134
	TOFL ~ FT	4694	4778	4862	4948	5035	5123	5211	5299	5388	5479	5567	5680	5743	5639	5951	6558	7233	7979
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	108	106	108	111	114
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	123	123	124	125	126	126	127	128
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132
	TOFL ~ FT	4643	4726	4810	4894	4980	5067	5154	5241	5329	5418	5505	5615	5671	5564	5495	5956	6583	7234
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	108	106	103	107	110
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120	120	121	121	122	123	124	125
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	130	129	129	129	129	129	129
	TOFL ~ FT	4592	4674	4757	4840	4925	5011	5096	5182	5269	5357	5443	5548	5598	5487	5414	5386	5948	6559
21,000 lb 9525 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	111	108	106	102	102	105
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	119	120	121
	V_2 ~ KIAS	130	130	130	130	130	130	129	129	129	129	129	129	127	126	126	126	126	126
	TOFL ~ FT	4542	4623	4705	4787	4871	4956	5040	5125	5210	5297	5381	5483	5525	5412	5334	5213	5347	5899
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	100
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	118	116	115	115	116	116	117
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	129	127	124	124	123	122	122
	TOFL ~ FT	4491	4571	4652	4734	4817	4902	4985	5068	5152	5236	5320	5417	5453	5337	5254	5129	5022	5268
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	117	116	113	112	113	113	113
	V_2 ~ KIAS	131	130	130	130	130	130	130	130	130	130	130	129	127	123	121	120	120	119
	TOFL ~ FT	4443	4522	4603	4685	4766	4849	4929	5012	5095	5178	5260	5338	5383	5264	5177	5049	4938	4813
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	118	116	113	110	109	110	110
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	130	130	128	123	120	118	117	117
	TOFL ~ FT	4397	4476	4556	4636	4716	4797	4878	4960	5041	5123	5207	5294	5317	5194	5103	4972	4856	4728
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	117	117	117	117	117	117	117	117	118	118	118	117	116	112	110	106	107	107
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	130	128	124	120	116	115	114
	TOFL ~ FT	4355	4433	4512	4591	4671	4751	4831	4911	4991	5071	5152	5237	5252	5128	5033	4897	4778	4646

WET RUNWAY CONDITION

RGACTO001C

Table 17

Flaps 0° **Field Pressure Altitude (1000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	118	117	117	117	117	117	117	117	117	117	117	119	122	124	127	130	134	
	V_R ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	139	139	140	141	141	142	
	V_2 ~ KIAS	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	
	TOFL ~ FT	5353	5434	5522	5613	5711	5811	5913	6016	6129	6239	6394	6800	7376	8027	8812	9773	10986	
27,000 lb 12,247 kg	V_1 ~ KIAS	114	114	114	114	114	114	114	114	114	114	114	116	118	121	124	127	130	
	V_R ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	137	138	138	139	140	
	V_2 ~ KIAS	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	
	TOFL ~ FT	5027	5103	5186	5272	5364	5459	5554	5650	5756	5858	6003	6378	6925	7552	8256	9128	10215	
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	115	118	120	123	126	130
	V_R ~ KIAS	134	134	134	134	134	134	134	134	134	134	134	134	135	135	136	137	137	138
	V_2 ~ KIAS	141	141	141	141	141	141	140	140	140	140	140	140	140	140	140	140	140	140
	TOFL ~ FT	4953	5040	5129	5220	5312	5406	5499	5592	5688	5784	5910	6009	6461	7057	7713	8497	9465	10618
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	110	113	116	119	122	125
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	131	132	132	133	134	135	135
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	137	137	137	137	137	137	137
	TOFL ~ FT	4907	4993	5081	5172	5263	5355	5447	5540	5635	5729	5853	5945	5943	6490	7106	7801	8655	9649
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	109	112	115	118	121
	V_R ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	127	128	129	130	131	131	132
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135
	TOFL ~ FT	4855	4941	5029	5118	5209	5300	5391	5482	5575	5669	5789	5875	5761	5928	6492	7141	7881	8739
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	107	107	110	113	116
	V_R ~ KIAS	124	124	124	124	124	124	124	124	124	124	124	124	125	126	126	127	128	129
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132
	TOFL ~ FT	4802	4887	4974	5062	5152	5242	5331	5421	5513	5606	5723	5802	5685	5654	5897	6493	7166	7905
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	107	104	105	109	111
	V_R ~ KIAS	121	121	121	121	121	121	121	121	121	121	121	121	121	122	123	124	124	125
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	130	129	129	129	129	129	129
	TOFL ~ FT	4748	4833	4918	5006	5094	5183	5272	5360	5451	5541	5656	5729	5609	5573	5459	5865	6486	7139
21,000 lb 9525 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	106	103	101	104	107
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	118	118	118	119	120	121	122
	V_2 ~ KIAS	130	130	130	130	129	129	129	129	129	129	129	128	127	126	126	126	126	126
	TOFL ~ FT	4695	4779	4864	4950	5037	5125	5212	5300	5389	5478	5590	5656	5534	5493	5375	5280	5825	6429
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	109	106	103	100	99	102
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	117	115	115	116	116	117	118
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	129	128	125	124	123	122	122	122
	TOFL ~ FT	4642	4725	4811	4896	4982	5068	5153	5239	5327	5415	5523	5583	5459	5412	5292	5192	5206	5742
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	97	96
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	117	113	112	113	113	113	114
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	129	128	124	122	121	120	119	119
	TOFL ~ FT	4590	4673	4758	4841	4926	5011	5096	5181	5267	5353	5446	5513	5386	5335	5211	5107	5003	5099
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	97	94
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	117	113	111	109	110	110	110
	V_2 ~ KIAS	131	131	131	131	131	130	130	130	130	130	130	128	124	121	119	118	117	116
	TOFL ~ FT	4543	4625	4707	4790	4874	4958	5042	5126	5215	5304	5398	5447	5316	5260	5133	5025	4917	4802
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	97	94
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	117	113	110	108	107	107	107
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	129	125	121	118	115	115	113
	TOFL ~ FT	4499	4580	4661	4743	4826	4909	4992	5075	5158	5242	5341	5382	5250	5189	5059	4946	4833	4715

WET RUNWAY CONDITION

RGACT0001C

Table 18

Flaps 0° **Field Pressure Altitude (2000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	118	118	118	117	117	117	117	117	118	118	119	121	124	126	129	133		
	V_R ~ KIAS	138	138	138	138	138	138	138	138	138	138	139	139	140	141	141	142		
	V_2 ~ KIAS	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144		
	TOFL ~ FT	5573	5652	5745	5843	5946	6051	6158	6267	6387	6521	6875	7399	8027	8763	9654	10767		
27,000 lb **12,247 kg**	V_1 ~ KIAS	114	114	114	114	114	114	114	114	114	114	115	118	121	123	126	129	132	
	V_R ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	137	138	138	139	140	140	
	V_2 ~ KIAS	142	143	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	
	TOFL ~ FT	5233	5307	5395	5488	5584	5682	5783	5885	5997	6123	6450	6945	7546	8216	9029	10029	11281	
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	114	117	120	122	125	129	
	V_R ~ KIAS	134	134	134	134	134	134	134	134	134	134	134	135	135	136	137	137	138	
	V_2 ~ KIAS	141	141	141	141	141	141	141	141	140	140	140	140	140	140	140	140	140	
	TOFL ~ FT	5128	5218	5311	5407	5503	5599	5697	5795	5896	6013	6203	6481	7049	7685	8414	9309	10416	
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	110	112	115	118	121	124	127
	V_R ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	132	132	133	134	134	135	136
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138
	TOFL ~ FT	5079	5168	5262	5356	5451	5547	5643	5740	5839	5955	6137	6018	6482	7077	7741	8530	9490	10634
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	110	108	111	114	117	120	123
	V_R ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	128	129	130	131	131	132	133
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135
	TOFL ~ FT	5026	5114	5207	5300	5394	5488	5584	5679	5777	5890	6065	5944	5925	6463	7083	7776	8616	9589
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	110	108	106	109	112	115	118
	V_R ~ KIAS	124	124	124	124	124	124	124	124	124	124	124	125	125	126	127	128	129	129
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132	132
	TOFL ~ FT	4970	5057	5149	5241	5334	5427	5521	5616	5712	5823	5989	5867	5825	5874	6435	7081	7804	8639
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	110	108	105	104	107	110	113
	V_R ~ KIAS	121	121	121	121	121	121	121	121	121	121	121	121	122	123	123	124	125	126
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	129	129	129	129	129	129	129
	TOFL ~ FT	4913	5000	5090	5182	5273	5365	5458	5551	5646	5755	5913	5789	5742	5640	5815	6402	7061	7775
21,000 lb **9525 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	110	107	105	102	103	106	108
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	118	119	119	120	121	121	122
	V_2 ~ KIAS	129	129	129	129	129	129	129	129	129	129	128	127	127	126	126	126	126	126
	TOFL ~ FT	4857	4944	5033	5123	5214	5305	5396	5488	5581	5688	5839	5713	5661	5555	5449	5749	6350	6987
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	113	110	107	104	102	99	101	104
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	115	116	116	116	117	118	118
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	129	129	129	125	124	124	123	123	123	123
	TOFL ~ FT	4799	4887	4976	5065	5154	5243	5334	5424	5516	5620	5763	5636	5579	5470	5360	5268	5666	6249
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	101	99	96	98
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	115	112	113	113	113	114	115
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	129	125	122	121	121	120	119	119
	TOFL ~ FT	4748	4833	4920	5008	5097	5185	5274	5372	5468	5571	5690	5561	5501	5388	5275	5178	5091	5545
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	101	98	96	93
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	114	112	109	110	110	110	111
	V_2 ~ KIAS	131	131	131	130	130	130	130	130	130	130	130	125	122	119	118	117	117	116
	TOFL ~ FT	4698	4782	4868	4955	5042	5129	5218	5307	5394	5493	5622	5490	5425	5309	5192	5090	4999	4908
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	101	98	96	93
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	114	112	109	107	107	107	107
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	130	130	126	123	119	116	115	114	113
	TOFL ~ FT	4650	4734	4820	4905	4991	5077	5164	5250	5337	5434	5554	5422	5352	5234	5113	5007	4910	4805

WET RUNWAY CONDITION

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Table 19

Flaps 0°　　Field Pressure Altitude (3000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	118 138 144 5784	118 138 144 5880	118 138 144 5981	118 138 144 6086	118 138 144 6194	118 138 144 6306	118 138 144 6419	118 138 144 6540	118 138 144 6674	119 139 144 6999	121 139 144 7496	123 140 144 8055	126 141 144 8750	129 141 144 9587	131 142 144 10609			
27,000 lb 12,247 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	114 136 143 5431	114 136 143 5521	114 136 143 5616	114 136 143 5714	114 136 143 5816	114 136 142 5921	114 136 142 6027	114 136 142 6141	114 136 142 6266	115 137 142 6567	118 137 142 7036	120 138 142 7570	122 138 142 8206	125 139 142 8976	128 140 142 9898	131 140 142 11063		
26,000 lb 11,793 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 134 141 5304	113 134 141 5402	113 134 141 5501	113 134 141 5600	113 134 141 5701	113 134 141 5803	113 134 141 5904	113 134 141 6007	113 134 141 6124	113 134 140 6312	114 135 140 6568	116 135 140 7070	119 136 140 7681	122 137 140 8369	124 137 140 9203	128 138 140 10236	131 138 140 11538	
25,000 lb 11,340 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 131 138 5253	113 131 138 5350	113 131 138 5448	113 131 138 5547	113 131 138 5647	113 131 138 5747	113 131 138 5847	113 131 138 5949	113 131 138 6064	113 131 138 6245	111 132 138 6166	112 132 138 6503	115 133 138 7072	117 134 138 7712	120 134 138 8444	123 135 138 9348	126 136 138 10464	
24,000 lb 10,886 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 127 135 5197	113 127 135 5294	113 127 135 5391	113 127 135 5488	113 127 135 5587	113 127 135 5686	113 127 135 5784	113 127 135 5886	113 127 135 5998	113 128 135 6172	111 128 135 6091	108 129 135 6050	110 130 135 6458	113 130 135 7054	116 131 135 7717	119 132 135 8504	122 133 135 9461	
23,000 lb 10,433 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 124 133 5139	113 124 133 5234	113 124 133 5330	113 124 133 5427	113 124 133 5524	113 124 133 5622	113 124 133 5719	113 124 133 5818	113 124 133 5929	113 124 133 6096	110 125 132 6012	108 125 132 5968	106 126 132 5904	108 127 132 6406	111 128 132 7021	114 128 132 7710	117 129 132 8542	
22,000 lb 9979 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 121 131 5080	113 121 131 5174	113 121 131 5269	113 121 131 5364	113 121 131 5460	113 121 131 5557	113 121 131 5653	113 121 131 5751	113 121 131 5859	113 121 130 6018	110 122 130 5933	108 122 129 5885	106 123 129 5817	104 123 129 5791	106 124 129 6344	109 125 129 6985	112 126 129 7696	
21,000 lb 9525 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 118 129 5022	113 118 129 5115	113 118 129 5209	113 118 129 5303	113 118 129 5398	113 118 129 5493	113 118 129 5587	113 118 129 5684	113 118 129 5790	113 118 128 5943	110 118 127 5855	108 119 127 5803	106 119 126 5731	103 120 126 5615	102 120 126 5698	105 121 126 6274	107 122 126 6925	
20,000 lb 9072 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 118 130 4964	112 118 130 5057	112 118 130 5149	112 118 130 5241	112 118 130 5335	112 118 129 5428	112 118 129 5522	112 118 129 5617	112 118 129 5721	113 118 129 5866	110 115 125 5776	108 116 125 5721	105 116 124 5645	103 116 123 5526	100 117 123 5431	99 117 123 5600	103 118 123 6185	
19,000 lb 8618 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 118 130 4908	112 118 130 4999	112 118 130 5091	112 118 130 5182	112 118 130 5277	112 118 130 5370	112 118 130 5463	112 118 130 5557	112 118 130 5654	112 118 129 5792	110 115 126 5700	108 113 123 5641	105 113 122 5561	102 113 121 5439	100 113 120 5341	97 114 119 5248	97 114 119 5488	
18,000 lb 8165 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 118 130 4855	112 118 130 4945	112 118 130 5036	112 118 130 5127	112 118 130 5219	112 118 130 5310	112 118 130 5399	112 118 130 5491	112 118 130 5591	112 118 129 5721	110 115 126 5627	108 112 123 5565	105 110 120 5481	102 110 119 5356	100 110 118 5253	97 111 117 5155	94 111 116 5061	
17,000 lb 7711 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 118 131 4806	112 118 131 4895	112 118 131 4984	112 118 131 5073	112 118 131 5163	112 118 131 5253	112 118 130 5342	112 118 130 5432	112 118 130 5531	112 118 130 5654	110 115 126 5558	107 112 123 5492	105 110 120 5404	102 107 117 5276	99 107 116 5169	97 108 115 5067	94 107 113 4967	

WET RUNWAY CONDITION

RGACTO001C

Table 20

Flaps 0° **Field Pressure Altitude (4000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	118	118	118	118	118	118	118	118	119	121	123	125	128	131	134			
	V_R ~ KIAS	139	139	139	139	139	139	139	139	139	140	140	141	141	142	142			
	V_2 ~ KIAS	145	145	144	144	144	144	144	144	144	144	144	144	144	144	144			
	TOFL ~ FT	6013	6130	6240	6354	6473	6582	6697	6837	7154	7628	8167	8775	9572	10535	11722			
27,000 lb 12,247 kg	V_1 ~ KIAS	115	115	115	115	115	115	115	115	116	118	120	122	124	127	130			
	V_R ~ KIAS	136	136	136	136	136	136	136	136	137	137	138	138	139	140	140			
	V_2 ~ KIAS	143	143	143	143	143	143	143	142	142	142	142	142	142	142	142			
	TOFL ~ FT	5645	5755	5859	5966	6077	6179	6286	6418	6712	7160	7676	8245	8969	9840	10906			
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	114	116	118	121	124	127	130		
	V_R ~ KIAS	134	134	134	134	134	134	134	134	134	135	135	136	137	137	138	138		
	V_2 ~ KIAS	141	141	141	141	141	141	141	141	140	140	140	140	140	140	140	140		
	TOFL ~ FT	5493	5600	5705	5811	5917	6017	6121	6239	6428	6684	7168	7711	8365	9159	10109	11300		
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	112	114	117	119	122	125	129	
	V_R ~ KIAS	131	131	131	131	131	131	131	131	131	132	132	133	134	134	135	136	136	
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	
	TOFL ~ FT	5440	5546	5650	5754	5859	5959	6061	6177	6360	6324	6597	7098	7716	8412	9251	10282	11579	
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	109	110	112	115	118	121	124	
	V_R ~ KIAS	127	127	127	127	127	127	127	127	128	128	129	130	130	131	132	132	133	
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	
	TOFL ~ FT	5382	5486	5589	5692	5796	5895	5996	6110	6286	6246	6183	6486	7055	7699	8429	9320	10418	
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	109	106	108	110	113	116	119	
	V_R ~ KIAS	124	124	124	124	124	124	124	124	125	125	126	126	127	128	128	129	130	
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132	132	
	TOFL ~ FT	5321	5424	5525	5627	5729	5827	5927	6039	6208	6165	6099	6067	6407	7001	7662	8432	9365	
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	108	106	104	106	109	111	114	
	V_R ~ KIAS	121	121	121	121	121	121	121	121	121	122	122	123	123	124	125	126	126	
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	129	129	129	129	129	129	129	
	TOFL ~ FT	5260	5361	5461	5561	5662	5759	5857	5967	6130	6084	6015	5979	5884	6323	6932	7612	8411	
21,000 lb 9525 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	108	106	104	101	104	106	109	
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	119	119	119	120	120	121	122	123	
	V_2 ~ KIAS	129	129	129	129	129	129	129	129	128	128	127	127	126	126	126	126	126	
	TOFL ~ FT	5199	5299	5398	5496	5596	5692	5789	5896	6052	6003	5931	5892	5794	5698	6221	6846	7531	
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	113	110	108	106	103	101	98	101	104	
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	116	116	116	116	116	117	118	119	
	V_2 ~ KIAS	130	130	129	129	129	129	129	129	129	126	125	124	124	123	123	123	123	
	TOFL ~ FT	5138	5236	5334	5431	5529	5624	5719	5825	5974	5922	5848	5804	5703	5603	5556	6108	6738	
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	101	98	96	99	
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	116	113	113	113	113	114	114	115	
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	129	126	123	122	121	121	120	120	120	
	TOFL ~ FT	5080	5177	5274	5369	5465	5559	5653	5756	5899	5844	5767	5720	5615	5512	5412	5425	5981	
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	101	98	95	94	
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	115	113	111	110	110	111	111	111	
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	129	127	123	121	119	118	117	117	116	
	TOFL ~ FT	5025	5120	5216	5309	5405	5496	5590	5691	5826	5769	5690	5638	5530	5423	5319	5224	5286	
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	100	98	95	92	
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	115	113	110	108	107	108	107	107	
	V_2 ~ KIAS	131	131	131	130	130	130	130	130	130	127	124	121	118	116	115	114	113	
	TOFL ~ FT	4972	5066	5160	5253	5347	5438	5530	5629	5757	5698	5616	5561	5449	5339	5230	5130	5023	

WET RUNWAY CONDITION

RGACTO001C

Table 21

Flaps 0°   Field Pressure Altitude (5000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	119	119	119	119	119	118	119	120	121	123	125	127	130	133				
	V_R ~ KIAS	139	139	139	139	139	139	139	139	140	140	141	141	142	142				
	V_2 ~ KIAS	145	145	145	145	145	145	145	145	145	145	145	145	145	145				
	TOFL ~ FT	6263	6402	6515	6651	6753	6862	7023	7359	7802	8326	8905	9594	10509	11616				
27,000 lb **12,247 kg**	V_1 ~ KIAS	115	115	115	115	115	115	115	116	118	120	122	124	127	129	133			
	V_R ~ KIAS	137	137	137	137	137	137	137	137	138	138	139	139	140	140	141			
	V_2 ~ KIAS	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143			
	TOFL ~ FT	5878	6009	6115	6243	6338	6437	6590	6906	7324	7826	8369	8995	9826	10822	12067			
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	112	114	116	118	120	123	126	129			
	V_R ~ KIAS	134	134	134	134	134	134	134	135	135	136	136	137	137	138	138			
	V_2 ~ KIAS	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141			
	TOFL ~ FT	5694	5809	5917	6031	6134	6238	6374	6468	6834	7308	7827	8393	9153	10044	11148			
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	112	114	116	119	121	124	127		
	V_R ~ KIAS	131	131	131	131	131	131	131	131	132	133	133	134	134	135	136	136		
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138		
	TOFL ~ FT	5639	5752	5860	5972	6074	6177	6310	6400	6388	6727	7206	7747	8412	9207	10167	11357		
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	109	109	112	114	117	120	123	126	
	V_R ~ KIAS	128	128	128	128	128	128	128	128	129	129	130	130	131	132	132	133	133	
	V_2 ~ KIAS	136	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	
	TOFL ~ FT	5579	5690	5796	5906	6008	6111	6241	6326	6311	6308	6587	7082	7706	8398	9238	10256	11534	
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	109	107	107	110	112	115	118	121	
	V_R ~ KIAS	124	124	124	124	124	124	124	125	125	126	126	127	128	128	129	130	130	
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132	132	132	
	TOFL ~ FT	5515	5625	5729	5838	5939	6040	6168	6249	6230	6223	6210	6435	7004	7643	8368	9243	10316	
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	108	107	104	105	108	110	113	116	
	V_R ~ KIAS	121	121	121	121	121	121	121	122	122	122	123	123	124	125	126	126	127	
	V_2 ~ KIAS	131	131	131	131	131	131	131	130	130	130	129	129	129	129	129	129	129	
	TOFL ~ FT	5451	5559	5662	5769	5869	5969	6094	6171	6148	6137	6120	6045	6326	6911	7569	8318	9225	
21,000 lb **9525 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	108	107	104	102	103	106	108	111	
	V_R ~ KIAS	118	118	118	118	118	118	118	118	119	119	119	119	120	121	122	123	123	
	V_2 ~ KIAS	129	129	129	129	129	129	129	128	128	127	127	126	126	126	126	126	126	
	TOFL ~ FT	5388	5494	5596	5701	5800	5899	6022	6094	6068	6053	6032	5954	5875	6201	6801	7467	8236	
20,000 lb **9072 kg**	V_1 ~ KIAS	112	113	112	113	112	112	112	112	110	108	106	104	102	99	100	103	106	
	V_R ~ KIAS	118	118	118	118	118	118	118	117	115	116	116	116	117	117	118	119	119	
	V_2 ~ KIAS	129	129	129	129	129	129	129	128	125	125	125	124	123	123	123	123	123	
	TOFL ~ FT	5324	5428	5529	5633	5730	5828	5948	6016	5987	5968	5943	5862	5779	5686	6065	6672	7338	
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	110	108	106	104	102	99	96	98	101	
	V_R ~ KIAS	118	118	118	118	118	118	118	117	115	113	113	113	114	114	114	115	116	
	V_2 ~ KIAS	130	130	130	130	130	130	129	128	126	123	122	122	121	120	120	120	120	
	TOFL ~ FT	5272	5370	5469	5567	5663	5761	5878	5941	5909	5887	5858	5774	5686	5590	5497	5919	6529	
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	111	110	108	106	104	101	99	96	93	96	
	V_R ~ KIAS	118	118	118	118	118	118	118	117	115	113	111	110	110	111	111	111	112	
	V_2 ~ KIAS	130	130	130	130	130	130	129	129	126	123	121	119	119	118	117	117	116	
	TOFL ~ FT	5208	5306	5404	5504	5600	5696	5795	5870	5835	5808	5776	5689	5597	5497	5399	5303	5766	
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	101	99	96	93	90	
	V_R ~ KIAS	118	118	118	118	118	118	117	117	115	113	111	108	107	108	108	107	108	
	V_2 ~ KIAS	131	130	130	130	130	130	130	129	126	124	121	118	116	116	115	113	113	
	TOFL ~ FT	5151	5250	5347	5445	5540	5635	5728	5802	5764	5733	5697	5608	5512	5407	5305	5204	5103	

WET RUNWAY CONDITION

RGACTO001C

Table 22

Flaps 0° **Field Pressure Altitude (6000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	119	119	119	119	119	119	120	122	123	125	127	129	132					
	V_R ~ KIAS	139	139	139	139	139	139	140	140	140	141	141	142	142					
	V_2 ~ KIAS	145	145	145	145	145	145	145	145	145	145	145	145	145					
	TOFL ~ FT	6435	6596	6756	6918	7049	7264	7612	8041	8518	9090	9751	10544	11588					
27,000 lb 12,247 kg	V_1 ~ KIAS	115	115	115	115	115	116	117	118	120	122	124	126	129	132				
	V_R ~ KIAS	137	137	137	137	137	137	137	138	138	139	139	140	140	141				
	V_2 ~ KIAS	143	143	143	143	143	143	143	143	143	143	143	143	143	143				
	TOFL ~ FT	6039	6190	6336	6489	6614	6817	7145	7553	8009	8543	9144	9868	10808	11969				
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	115	116	118	120	122	125	128	131			
	V_R ~ KIAS	135	135	135	135	135	135	135	135	136	136	137	137	138	138	139			
	V_2 ~ KIAS	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141			
	TOFL ~ FT	5853	5986	6119	6253	6382	6508	6678	7051	7480	7990	8534	9198	10044	11075	12361			
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	112	110	112	114	116	118	121	123	126			
	V_R ~ KIAS	131	131	131	131	131	131	132	132	133	133	134	134	135	136	136			
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138			
	TOFL ~ FT	5798	5929	6060	6192	6319	6442	6483	6499	6887	7358	7880	8459	9218	10120	11229			
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	112	110	109	109	112	114	116	119	122	125		
	V_R ~ KIAS	128	128	128	128	128	128	128	129	129	130	131	131	132	132	133	133		
	V_2 ~ KIAS	136	136	136	135	135	135	135	135	135	135	135	135	135	135	135	135		
	TOFL ~ FT	5738	5866	5995	6124	6249	6370	6408	6406	6440	6727	7205	7755	8413	9211	10164	11344		
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	112	110	109	107	107	109	112	114	117	120		
	V_R ~ KIAS	125	125	125	125	125	125	125	125	126	127	127	128	128	129	130	130		
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133		
	TOFL ~ FT	5675	5801	5927	6054	6177	6294	6329	6324	6354	6366	6548	7047	7662	8351	9181	10182		
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	111	110	108	107	105	104	107	110	112	115		
	V_R ~ KIAS	122	122	122	122	122	122	122	122	122	123	123	124	125	125	126	127		
	V_2 ~ KIAS	131	131	131	131	131	131	131	130	130	130	130	130	130	130	130	130		
	TOFL ~ FT	5611	5734	5858	5982	6103	6217	6250	6241	6266	6274	6220	6369	6924	7561	8273	9129		
21,000 lb 9525 kg	V_1 ~ KIAS	113	113	113	113	113	112	111	110	108	107	105	102	102	105	107	110		
	V_R ~ KIAS	118	118	118	118	118	118	119	119	119	120	120	120	121	122	122	123		
	V_2 ~ KIAS	129	129	129	129	129	128	128	128	127	127	126	126	126	126	126	126		
	TOFL ~ FT	5548	5669	5790	5912	6031	6142	6172	6160	6180	6184	6127	6051	6214	6788	7436	8163		
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	111	110	108	107	105	102	100	100	102	105		
	V_R ~ KIAS	118	118	118	118	118	118	117	116	116	117	117	117	117	118	119	119		
	V_2 ~ KIAS	129	129	129	129	129	129	127	126	125	125	124	124	123	123	123	123		
	TOFL ~ FT	5484	5602	5721	5841	5958	6066	6093	6078	6094	6093	6033	5954	5878	6054	6634	7287		
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	111	109	108	107	105	102	100	97	97	100		
	V_R ~ KIAS	118	118	118	118	118	118	117	115	113	113	114	114	114	114	115	115		
	V_2 ~ KIAS	130	130	130	129	129	129	127	125	123	122	122	121	121	120	120	120		
	TOFL ~ FT	5423	5540	5656	5773	5888	5993	6017	5999	6011	6005	5942	5861	5780	5681	5887	6477		
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	111	109	108	106	104	102	100	97	94	95		
	V_R ~ KIAS	118	118	118	118	118	117	116	114	113	111	110	111	111	111	111	112		
	V_2 ~ KIAS	130	130	130	130	129	129	128	125	123	121	119	119	118	118	117	116		
	TOFL ~ FT	5366	5479	5593	5708	5802	5895	5944	5924	5931	5921	5855	5771	5686	5583	5484	5721		
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	111	109	108	106	104	102	100	97	94	92		
	V_R ~ KIAS	118	118	118	118	118	117	116	114	113	111	109	107	108	108	108	108		
	V_2 ~ KIAS	130	130	130	130	130	130	128	126	124	122	119	117	116	115	114	113		
	TOFL ~ FT	5312	5422	5535	5642	5748	5856	5875	5857	5855	5841	5772	5685	5595	5488	5385	5294		

WET RUNWAY CONDITION

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Table 23

Flaps 0°   Field Pressure Altitude (7000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	117	118	119	119	120	121	123	124	125	127	129	132	134					
	V_R ~ KIAS	139	139	139	139	140	140	140	141	141	141	142	142	143					
	V_2 ~ KIAS	145	145	145	145	145	145	145	145	145	145	145	145	145					
	TOFL ~ FT	6481	6730	7000	7283	7560	7916	8308	8771	9301	9954	10700	11615	12828					
27,000 lb 12,247 kg	V_1 ~ KIAS	113	114	115	116	117	118	119	121	122	124	126	128	131					
	V_R ~ KIAS	137	137	137	137	137	138	138	138	139	139	140	140	141					
	V_2 ~ KIAS	143	143	143	143	143	143	143	143	143	143	143	143	143					
	TOFL ~ FT	6087	6319	6567	6834	7096	7434	7807	8251	8741	9335	10017	10843	11933					
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	114	115	117	118	120	122	124	127	130				
	V_R ~ KIAS	135	135	135	135	135	135	136	136	136	137	137	138	138	139				
	V_2 ~ KIAS	142	141	141	141	141	141	141	141	141	141	141	141	141	141				
	TOFL ~ FT	6025	6183	6348	6520	6633	6948	7300	7711	8176	8713	9341	10085	11056	12264				
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	112	111	111	113	114	116	118	120	123	126	129			
	V_R ~ KIAS	131	132	132	132	132	132	133	133	133	134	134	135	136	136	136			
	V_2 ~ KIAS	139	139	138	138	138	138	138	138	138	138	138	138	138	138	138			
	TOFL ~ FT	5972	6126	6288	6455	6532	6546	6724	7102	7532	8046	8594	9265	10119	11166	12464			
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	112	111	109	108	110	112	114	116	118	121	124			
	V_R ~ KIAS	128	128	128	128	128	129	129	130	130	131	131	132	132	133	133			
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136			
	TOFL ~ FT	5914	6064	6221	6383	6457	6468	6448	6530	6888	7359	7882	8462	9220	10127	11234			
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	112	111	109	108	107	107	109	111	114	116	119	122		
	V_R ~ KIAS	125	125	125	125	125	125	126	126	127	127	128	128	129	130	130	131		
	V_2 ~ KIAS	134	134	133	133	133	133	133	133	133	133	133	133	133	133	133	133		
	TOFL ~ FT	5853	5998	6150	6308	6379	6388	6366	6442	6456	6689	7163	7711	8364	9161	10103	11268		
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	112	111	109	108	107	105	104	107	109	111	114	117		
	V_R ~ KIAS	122	122	122	122	122	122	122	123	123	124	124	125	125	126	127	127		
	V_2 ~ KIAS	132	131	131	131	131	130	130	130	130	130	130	130	130	130	130	130		
	TOFL ~ FT	5791	5932	6079	6231	6300	6307	6283	6354	6364	6351	6475	6967	7577	8260	9076	10055		
21,000 lb 9525 kg	V_1 ~ KIAS	112	113	113	113	112	110	109	108	107	105	103	102	104	107	109	112		
	V_R ~ KIAS	118	118	118	118	119	119	119	119	120	120	120	121	122	122	123	124		
	V_2 ~ KIAS	129	129	129	129	128	128	128	127	127	127	126	126	126	126	126	126		
	TOFL ~ FT	5729	5866	6009	6156	6222	6227	6201	6268	6273	6256	6193	6254	6797	7429	8116	8956		
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	113	112	110	109	108	106	105	103	100	99	102	104	107		
	V_R ~ KIAS	118	118	118	118	117	116	116	116	117	117	117	117	118	119	119	120		
	V_2 ~ KIAS	130	129	129	129	128	126	125	125	125	124	124	123	123	123	123	123		
	TOFL ~ FT	5668	5800	5938	6080	6143	6146	6120	6180	6182	6161	6095	6031	6064	6623	7261	7965		
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	110	109	108	106	105	102	100	98	96	99	102		
	V_R ~ KIAS	118	118	118	118	117	115	114	113	113	114	114	114	114	115	115	116		
	V_2 ~ KIAS	130	130	130	129	128	126	124	123	122	122	121	121	120	120	120	120		
	TOFL ~ FT	5603	5736	5870	6007	6068	6069	6041	6097	6094	6069	6000	5932	5855	5881	6444	7082		
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	111	110	108	108	106	104	102	100	98	95	94	97		
	V_R ~ KIAS	118	118	118	118	117	115	113	112	111	110	111	111	111	111	111	112		
	V_2 ~ KIAS	130	130	130	129	128	127	124	123	121	120	119	118	118	117	117	117		
	TOFL ~ FT	5554	5677	5805	5920	5996	5995	5965	6016	6009	5981	5909	5838	5755	5661	5697	6259		
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	111	110	108	107	106	104	102	100	98	95	92	91		
	V_R ~ KIAS	117	118	118	118	117	115	113	112	111	109	107	108	108	108	108	108		
	V_2 ~ KIAS	131	130	130	130	129	127	125	123	121	119	117	116	115	114	113	113		
	TOFL ~ FT	5502	5621	5745	5872	5927	5926	5913	5939	5929	5896	5822	5747	5660	5561	5465	5506		

WET RUNWAY CONDITION

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Table 24

Flaps 0° Field Pressure Altitude (8000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	117	119	120	121	122	123	124	126	127	129	131	134						
	V_R ~ KIAS	139	139	140	140	140	141	141	141	142	142	142	143						
	V_2 ~ KIAS	145	145	145	145	145	145	145	145	145	145	145	145						
	TOFL ~ FT	6842	7144	7500	7870	8244	8646	9062	9593	10200	10937	11797	12837						
27,000 lb **12,247 kg**	V_1 ~ KIAS	114	115	116	118	119	120	121	123	124	126	128	130	133					
	V_R ~ KIAS	137	137	137	138	138	138	139	139	140	140	140	141	141					
	V_2 ~ KIAS	143	143	143	143	143	143	143	143	143	143	143	143	143					
	TOFL ~ FT	6431	6711	7038	7389	7745	8131	8534	9004	9566	10240	11016	11954	13246					
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	114	115	116	118	119	120	122	124	127	129					
	V_R ~ KIAS	135	135	135	135	136	136	136	137	137	138	138	138	139					
	V_2 ~ KIAS	142	141	141	141	141	141	141	141	141	141	141	141	141					
	TOFL ~ FT	6323	6493	6637	6902	7238	7600	7976	8434	8928	9548	10251	11087	12227					
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	112	111	112	113	115	116	118	120	122	125	128				
	V_R ~ KIAS	132	132	132	132	133	133	133	134	134	135	135	136	136	137				
	V_2 ~ KIAS	139	139	138	138	139	138	138	138	138	138	138	138	138	138				
	TOFL ~ FT	6265	6431	6570	6620	6670	6999	7352	7776	8247	8788	9422	10161	11156	12394				
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	112	110	109	109	110	112	114	116	118	120	123	126			
	V_R ~ KIAS	128	128	128	129	129	130	130	130	131	131	132	132	133	133	134			
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136			
	TOFL ~ FT	6201	6361	6496	6543	6529	6557	6730	7113	7545	8060	8609	9269	10135	11197	12506			
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	111	110	109	108	107	107	109	111	113	116	118	121			
	V_R ~ KIAS	125	125	125	125	126	126	126	127	127	128	128	129	130	130	131			
	V_2 ~ KIAS	134	134	133	133	133	133	133	133	133	133	133	133	133	133	133			
	TOFL ~ FT	6133	6289	6418	6462	6447	6471	6531	6570	6859	7325	7846	8425	9178	10088	11190			
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	112	111	110	108	108	106	105	104	106	109	111	113	116			
	V_R ~ KIAS	122	122	122	122	122	123	123	123	124	124	125	125	126	127	127			
	V_2 ~ KIAS	132	131	131	131	130	130	130	130	130	130	130	130	130	130	130			
	TOFL ~ FT	6065	6215	6340	6380	6364	6386	6442	6477	6492	6622	7090	7625	8280	9076	10006			
21,000 lb **9525 kg**	V_1 ~ KIAS	113	113	112	111	110	108	107	106	105	103	101	104	106	108	111			
	V_R ~ KIAS	119	119	119	119	119	119	120	120	120	121	121	122	122	123	124			
	V_2 ~ KIAS	129	129	129	128	128	128	127	127	127	127	127	127	127	127	127			
	TOFL ~ FT	5998	6143	6262	6300	6282	6301	6354	6384	6395	6348	6366	6839	7448	8125	8926			
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	111	109	108	107	106	105	103	101	99	101	104	106			
	V_R ~ KIAS	118	118	118	117	116	116	116	117	117	117	117	118	118	119	120			
	V_2 ~ KIAS	130	129	128	127	126	125	125	125	124	124	123	123	123	123	123			
	TOFL ~ FT	5930	6070	6184	6219	6199	6216	6265	6291	6297	6248	6197	6135	6637	7266	7945			
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	111	109	108	107	106	105	103	101	99	96	98	101			
	V_R ~ KIAS	118	118	118	116	114	113	113	114	114	114	114	114	115	115	116			
	V_2 ~ KIAS	130	130	129	127	125	123	123	122	122	122	121	120	120	120	120			
	TOFL ~ FT	5865	6000	6109	6141	6120	6135	6180	6202	6204	6151	6097	6031	5952	6446	7069			
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	111	109	108	107	106	104	103	101	98	96	93	96			
	V_R ~ KIAS	118	118	118	116	114	113	112	111	111	111	111	111	111	112	112			
	V_2 ~ KIAS	130	130	129	127	125	124	122	121	120	119	119	118	117	117	117			
	TOFL ~ FT	5804	5925	6038	6067	6045	6056	6098	6116	6113	6058	6000	5930	5847	5755	6243			
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	110	109	108	107	106	104	102	100	98	96	93	91			
	V_R ~ KIAS	117	118	117	116	114	113	112	110	109	108	108	108	108	108	108			
	V_2 ~ KIAS	131	130	129	128	126	124	123	121	119	117	116	116	115	114	113			
	TOFL ~ FT	5746	5859	5971	5983	5974	5982	6020	6034	6027	5968	5907	5834	5746	5649	5551			

WET RUNWAY CONDITION

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Table 25

Flaps 0° **Field Pressure Altitude (9000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	119 140 145 7443	121 140 145 7798	122 140 145 8189	123 141 145 8596	124 141 145 9007	125 141 145 9448	127 142 145 9930	128 142 145 10526	130 142 145 11224	132 143 145 12063	134 143 145 13048							
27,000 lb 12,247 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	116 138 143 6989	117 138 143 7320	118 138 143 7692	120 138 143 8082	121 139 143 8475	122 139 143 8888	123 139 143 9322	125 140 143 9873	126 140 143 10510	128 141 143 11271	130 141 143 12154	133 141 143 13276						
26,000 lb 11,793 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 135 141 6658	113 135 141 6838	115 136 141 7182	116 136 141 7551	117 136 141 7922	119 137 141 8317	120 137 141 8729	121 137 141 9217	123 138 141 9801	124 138 141 10488	127 139 141 11282	129 139 141 12274	132 139 141 13631					
25,000 lb 11,340 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 132 139 6590	112 132 139 6670	111 133 139 6685	112 133 139 6955	113 133 139 7298	114 134 139 7665	116 134 139 8053	117 134 139 8513	118 135 139 9021	120 135 139 9641	122 136 139 10343	124 136 139 11210	127 137 139 12374					
24,000 lb 10,886 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 129 136 6517	112 129 136 6593	111 129 136 6606	109 130 136 6592	108 130 136 6683	110 130 136 7014	111 131 136 7367	113 131 136 7794	114 132 136 8274	116 132 136 8810	118 133 136 9439	120 133 136 10196	122 134 136 11200	125 134 136 12441				
23,000 lb 10,433 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 125 134 6440	112 126 133 6513	111 126 133 6524	109 126 133 6507	108 127 133 6588	107 127 133 6614	106 127 133 6702	108 128 133 7085	109 128 133 7521	111 129 133 8029	113 129 133 8581	115 130 133 9241	118 130 133 10106	120 131 133 11155	123 131 133 12452			
22,000 lb 9979 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 122 131 6362	112 122 131 6431	111 123 131 6440	109 123 130 6422	108 123 130 6499	107 123 130 6522	106 124 130 6541	104 124 130 6526	105 125 130 6799	107 125 130 7255	109 126 130 7767	110 126 130 8355	113 127 130 9101	115 127 130 9996	118 128 130 11072			
21,000 lb 9525 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 119 129 6285	112 119 129 6351	110 119 128 6358	109 120 128 6338	108 120 128 6412	107 120 127 6432	106 120 127 6447	104 120 127 6430	102 121 127 6431	102 121 127 6514	104 122 127 6967	106 122 127 7505	108 123 127 8165	110 124 127 8922	113 124 127 9832			
20,000 lb 9072 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 118 129 6208	112 117 128 6271	110 116 126 6275	109 116 126 6254	108 117 125 6323	107 117 125 6341	105 117 125 6354	104 117 124 6333	102 117 124 6330	101 117 124 6336	99 118 123 6280	101 119 123 6689	103 119 123 7287	105 120 123 7961	108 120 123 8718			
19,000 lb 8618 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 118 129 6134	112 117 128 6193	110 115 126 6195	108 113 124 6173	108 113 123 6238	107 114 123 6253	105 114 122 6263	104 114 122 6240	102 114 122 6233	101 114 121 6234	99 114 121 6175	97 115 120 6108	98 115 120 6465	100 116 120 7074	103 117 120 7744			
18,000 lb 8165 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 118 130 6063	111 117 128 6119	110 115 126 6119	108 113 124 6095	108 112 123 6157	106 111 121 6169	105 110 120 6177	104 111 120 6150	102 111 119 6139	101 111 119 6135	99 111 118 6073	96 112 118 6003	94 112 117 5933	95 112 117 6248	98 113 117 6850			
17,000 lb 7711 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 118 130 5996	111 117 129 6049	110 115 127 6040	108 113 125 6022	107 112 123 6080	106 111 122 6090	105 110 120 6095	103 108 118 6065	102 108 117 6050	101 108 116 6041	98 108 116 5976	96 109 115 5901	94 108 114 5826	92 108 114 5733	92 109 114 6019			

WET RUNWAY CONDITION

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Table 26

Flaps 0° **Field Pressure Altitude (10,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	122	123	124	125	126	128	129	130	132	134								
	V_R ~ KIAS	141	141	141	141	142	142	142	143	143	143								
	V_2 ~ KIAS	146	146	146	146	146	146	146	146	146	146								
	TOFL ~ FT	8156	8537	8957	9394	9866	10366	10910	11594	12388	13374								
27,000 lb 12,247 kg	V_1 ~ KIAS	118	120	121	122	123	124	125	127	128	130	133							
	V_R ~ KIAS	138	139	139	139	140	140	140	140	141	141	141							
	V_2 ~ KIAS	144	144	144	144	144	144	144	144	144	144	144							
	TOFL ~ FT	7661	8025	8427	8842	9265	9733	10224	10856	11574	12460	13513							
26,000 lb 11,793 kg	V_1 ~ KIAS	115	116	117	118	119	121	122	123	125	127	129	131						
	V_R ~ KIAS	136	136	136	137	137	137	138	138	138	139	139	140						
	V_2 ~ KIAS	141	141	141	141	141	141	141	141	141	141	141	141						
	TOFL ~ FT	7156	7494	7875	8273	8680	9103	9554	10124	10771	11566	12499	13671						
25,000 lb 11,340 kg	V_1 ~ KIAS	112	111	113	114	115	117	118	119	121	122	124	127	130					
	V_R ~ KIAS	133	133	133	134	134	134	135	135	136	136	136	137	137					
	V_2 ~ KIAS	139	139	139	139	139	139	139	139	139	139	139	139	139					
	TOFL ~ FT	6769	6907	7254	7622	8004	8404	8820	9319	9899	10604	11420	12428	13824					
24,000 lb 10,886 kg	V_1 ~ KIAS	112	110	109	109	111	112	113	115	116	118	120	122	125					
	V_R ~ KIAS	129	130	130	131	131	131	131	132	132	133	133	134	134					
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	136					
	TOFL ~ FT	6689	6669	6704	6976	7323	7691	8082	8546	9047	9677	10391	11259	12442					
23,000 lb 10,433 kg	V_1 ~ KIAS	111	110	109	108	106	107	109	110	112	113	115	117	120	123				
	V_R ~ KIAS	126	126	127	127	127	128	128	128	129	129	130	130	131	131				
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	133	133				
	TOFL ~ FT	6606	6584	6617	6676	6700	6993	7346	7773	8244	8785	9420	10173	11177	12390				
22,000 lb 9979 kg	V_1 ~ KIAS	111	110	108	107	106	105	104	105	107	109	110	112	115	117				
	V_R ~ KIAS	123	123	123	123	124	124	124	125	125	126	126	127	127	128				
	V_2 ~ KIAS	131	131	130	130	130	130	130	130	130	130	130	130	130	130				
	TOFL ~ FT	6521	6498	6528	6584	6605	6611	6647	7028	7450	7963	8518	9169	10031	11047				
21,000 lb 9525 kg	V_1 ~ KIAS	111	110	108	107	106	105	103	102	102	104	106	108	110	112				
	V_R ~ KIAS	120	120	120	120	120	120	121	121	122	122	123	123	124	124				
	V_2 ~ KIAS	129	128	128	128	127	127	127	127	127	127	127	127	127	127				
	TOFL ~ FT	6438	6414	6441	6494	6512	6516	6504	6543	6689	7142	7652	8233	8969	9830				
20,000 lb 9072 kg	V_1 ~ KIAS	111	109	108	107	106	105	103	102	101	99	101	103	105	107				
	V_R ~ KIAS	117	117	117	117	117	117	117	117	118	118	119	119	120	120				
	V_2 ~ KIAS	127	126	126	125	125	125	124	124	124	124	124	124	124	124				
	TOFL ~ FT	6354	6329	6354	6403	6419	6420	6406	6440	6484	6441	6822	7348	8000	8734				
19,000 lb 8618 kg	V_1 ~ KIAS	111	109	108	107	106	105	103	102	101	99	97	97	100	102				
	V_R ~ KIAS	116	114	113	114	114	114	114	114	115	115	115	115	116	117				
	V_2 ~ KIAS	127	125	123	123	123	122	122	122	121	121	120	120	120	120				
	TOFL ~ FT	6273	6248	6270	6315	6328	6327	6311	6341	6379	6333	6277	6522	7110	7756				
18,000 lb 8165 kg	V_1 ~ KIAS	111	109	108	107	106	104	103	102	101	99	97	95	94	97				
	V_R ~ KIAS	116	114	113	112	111	111	111	111	112	112	112	112	112	113				
	V_2 ~ KIAS	127	125	123	122	120	120	120	119	119	118	118	117	117	117				
	TOFL ~ FT	6196	6170	6189	6231	6242	6239	6221	6245	6278	6228	6169	6109	6282	6858				
17,000 lb 7711 kg	V_1 ~ KIAS	110	109	108	107	106	104	103	102	101	99	97	95	92	92				
	V_R ~ KIAS	116	114	113	112	110	109	108	108	108	109	109	108	108	109				
	V_2 ~ KIAS	127	125	124	122	121	119	117	117	117	116	116	115	114	114				
	TOFL ~ FT	6100	6096	6113	6152	6160	6154	6135	6155	6181	6128	6066	6002	5924	6029				

WET RUNWAY CONDITION

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Table 27

Flaps 0° **Field Pressure Altitude (11,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	124 141 146 8936	125 142 146 9344	126 142 146 9818	127 142 146 10323	129 142 146 10846	130 143 146 11412	131 143 146 12045	133 143 146 12836	134 143 146 13763									
27,000 lb **12,247 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	121 139 144 8407	122 139 144 8799	123 140 144 9220	124 140 144 9692	125 140 144 10178	126 140 144 10697	128 141 144 11268	129 141 144 11985	131 141 144 12821	133 142 144 13851								
26,000 lb **11,793 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	117 137 142 7856	118 137 142 8230	119 137 142 8639	120 138 142 9069	122 138 142 9506	123 138 142 9983	124 138 142 10506	125 139 142 11151	127 139 142 11896	129 139 142 12813	131 140 142 13927							
25,000 lb **11,340 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 134 139 7238	114 134 139 7581	115 134 139 7964	116 135 139 8371	117 135 139 8779	119 135 139 9205	120 135 139 9669	121 136 139 10246	123 136 139 10907	125 137 139 11704	127 137 139 12667	129 137 139 13886						
24,000 lb **10,886 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	109 130 136 6734	109 131 136 6940	110 131 136 7287	112 131 136 7659	113 132 136 8041	114 132 136 8440	115 132 136 8862	117 133 136 9366	118 133 136 9953	120 133 136 10653	122 134 136 11480	124 134 136 12517	127 135 136 13872					
23,000 lb **10,433 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	109 127 133 6647	108 127 133 6730	107 127 133 6755	107 128 133 6965	108 128 133 7309	110 128 133 7673	111 129 133 8067	112 129 133 8533	114 130 133 9036	115 130 133 9657	117 130 133 10377	119 131 133 11257	122 131 133 12393	125 132 133 13775				
22,000 lb **9979 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	109 123 131 6559	108 123 130 6638	107 124 130 6660	105 124 130 6682	104 124 130 6677	105 125 130 6940	106 125 130 7291	107 126 130 7718	109 126 130 8190	111 126 130 8732	112 127 130 9355	115 127 130 10114	117 128 130 11070	120 128 130 12212				
21,000 lb **9525 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	109 120 128 6471	108 120 128 6548	107 120 128 6567	105 120 127 6586	104 121 127 6579	103 121 127 6588	101 121 127 6612	102 122 127 6928	104 122 127 7348	106 123 127 7845	108 123 127 8402	110 124 127 9050	112 124 127 9866	114 125 127 10814				
20,000 lb **9072 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	109 117 126 6384	108 117 126 6457	107 117 125 6474	105 117 125 6490	104 117 125 6481	103 118 124 6487	101 118 124 6508	100 118 124 6527	99 118 124 6560	101 119 124 6995	103 119 124 7493	105 120 124 8080	107 120 124 8772	109 121 124 9574				
19,000 lb **8618 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 114 124 6300	108 114 123 6369	106 114 123 6384	105 114 123 6397	104 114 122 6386	102 114 122 6390	101 115 122 6407	100 115 121 6422	99 115 121 6424	97 115 120 6401	97 115 120 6658	99 116 120 7172	102 117 120 7797	104 117 120 8475				
18,000 lb **8165 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 113 124 6220	107 112 123 6285	106 111 121 6297	105 111 120 6308	104 111 120 6295	102 111 120 6297	101 111 119 6311	100 112 119 6321	98 112 119 6318	97 112 118 6291	95 112 118 6249	94 112 117 6348	96 113 117 6893	99 113 117 7503				
17,000 lb **7711 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 113 124 6144	107 112 123 6206	106 111 121 6215	105 109 120 6223	103 108 118 6209	102 108 117 6208	101 108 117 6219	100 109 117 6225	98 109 116 6218	97 109 116 6186	95 109 115 6140	93 108 114 6077	91 109 114 6063	93 109 114 6594				

WET RUNWAY CONDITION

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Table 28

Flaps 0° Field Pressure Altitude (12,000 feet)

WET RUNWAY CONDITION

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	126	127	128	130	131	132	133	135										
	V_R ~ KIAS	142	142	143	143	143	143	143	144										
	V_2 ~ KIAS	146	146	146	146	146	146	146	146										
	TOFL ~ FT	9903	10380	10911	11494	12096	12752	13474	14416										
27,000 lb **12,247 kg**	V_1 ~ KIAS	123	124	125	126	127	129	130	132	133									
	V_R ~ KIAS	140	140	140	141	141	141	141	142	142									
	V_2 ~ KIAS	144	144	144	144	144	144	144	144	144									
	TOFL ~ FT	9313	9747	10238	10774	11322	11919	12573	13418	14414									
26,000 lb **11,793 kg**	V_1 ~ KIAS	119	120	121	123	124	125	126	128	129	132								
	V_R ~ KIAS	137	138	138	138	138	139	139	139	140	140								
	V_2 ~ KIAS	142	142	142	142	142	142	142	142	142	142								
	TOFL ~ FT	8718	9123	9563	10061	10562	11100	11688	12446	13329	14431								
25,000 lb **11,340 kg**	V_1 ~ KIAS	115	116	117	118	120	121	122	123	125	127	129							
	V_R ~ KIAS	134	135	135	135	136	136	136	136	137	137	137							
	V_2 ~ KIAS	139	139	139	139	139	139	139	139	139	139	139							
	TOFL ~ FT	8035	8419	8833	9279	9724	10212	10733	11401	12173	13125	14277							
24,000 lb **10,886 kg**	V_1 ~ KIAS	110	112	113	114	115	116	117	119	120	122	124	127						
	V_R ~ KIAS	131	131	132	132	132	133	133	133	134	134	134	135						
	V_2 ~ KIAS	137	137	137	137	137	137	137	137	137	137	137	137						
	TOFL ~ FT	7354	7701	8087	8506	8917	9339	9812	10403	11077	11897	12877	14110						
23,000 lb **10,433 kg**	V_1 ~ KIAS	107	107	108	109	111	112	113	114	116	117	119	122	124					
	V_R ~ KIAS	128	128	128	129	129	129	129	130	130	131	131	131	132					
	V_2 ~ KIAS	134	134	134	134	134	134	134	134	134	134	134	134	134					
	TOFL ~ FT	6886	7005	7351	7732	8113	8516	8935	9446	10040	10750	11586	12623	13922					
22,000 lb **9979 kg**	V_1 ~ KIAS	107	106	105	105	106	107	108	110	111	113	114	117	119	122				
	V_R ~ KIAS	124	124	125	125	125	126	126	126	127	127	128	128	128	129				
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	131	131	131				
	TOFL ~ FT	6790	6807	6813	6994	7335	7700	8087	8560	9066	9695	10411	11288	12370	13670				
21,000 lb **9526 kg**	V_1 ~ KIAS	107	106	105	103	102	102	103	105	106	108	110	111	114	116				
	V_R ~ KIAS	121	121	121	121	121	122	122	122	123	123	124	124	125	125				
	V_2 ~ KIAS	128	128	127	127	127	127	127	127	127	127	127	127	127	127				
	TOFL ~ FT	6695	6710	6714	6720	6746	6916	7258	7684	8158	8706	9322	10067	10972	12041				
20,000 lb **9072 kg**	V_1 ~ KIAS	107	106	104	103	102	101	100	99	101	103	105	106	108	111				
	V_R ~ KIAS	118	118	118	118	118	118	118	119	119	120	120	120	121	122				
	V_2 ~ KIAS	126	125	125	125	124	124	124	124	124	124	124	124	124	124				
	TOFL ~ FT	6599	6613	6614	6617	6641	6662	6682	6859	7274	7771	8321	8956	9725	10610				
19,000 lb **8618 kg**	V_1 ~ KIAS	107	106	104	103	102	101	99	98	97	97	99	101	103	105				
	V_R ~ KIAS	114	114	115	115	115	115	115	115	115	116	116	117	117	118				
	V_2 ~ KIAS	123	123	123	122	122	122	121	121	121	121	121	121	121	121				
	TOFL ~ FT	6508	6519	6518	6519	6539	6558	6575	6608	6602	6900	7395	7970	8612	9364				
18,000 lb **8165 kg**	V_1 ~ KIAS	107	106	104	103	102	100	99	98	97	95	94	96	98	100				
	V_R ~ KIAS	112	111	111	111	112	112	112	112	112	112	112	113	113	114				
	V_2 ~ KIAS	122	121	120	120	120	119	119	119	118	118	117	117	117	117				
	TOFL ~ FT	6420	6429	6426	6424	6442	6457	6472	6500	6489	6467	6553	7042	7633	8258				
17,000 lb **7711 kg**	V_1 ~ KIAS	107	105	104	103	101	100	99	98	96	95	93	91	93	95				
	V_R ~ KIAS	111	110	109	108	108	109	109	109	109	109	108	109	109	110				
	V_2 ~ KIAS	122	120	119	117	117	117	117	116	116	115	114	114	114	114				
	TOFL ~ FT	6336	6343	6339	6334	6349	6362	6373	6396	6381	6354	6306	6246	6708	7282				

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Table 29

Flaps 0° **Field Pressure Altitude (13,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	128 143 146 11110	130 143 146 11657	131 143 146 12276	132 143 146 12965	133 144 146 13665	135 144 146 14441												
27,000 lb 12,247 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	125 141 144 10429	126 141 144 10934	127 141 144 11496	129 141 144 12124	130 141 144 12760	131 142 144 13460	132 142 144 14256	134 142 144 15251										
26,000 lb 11,793 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	121 138 142 9742	122 138 142 10209	124 139 142 10727	125 139 142 11295	126 139 142 11868	127 139 142 12499	129 140 142 13210	130 140 142 14093	132 140 142 15155									
25,000 lb 11,340 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	117 135 139 9000	118 135 139 9419	119 136 139 9876	121 136 139 10393	122 136 139 10903	123 136 139 11462	124 137 139 12088	126 137 139 12861	127 137 139 13780	130 138 139 14932								
24,000 lb 10,886 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 132 137 8239	114 132 137 8633	115 132 137 9058	116 133 137 9518	117 133 137 9971	118 133 137 10469	120 134 137 11018	121 134 137 11692	123 134 137 12488	125 135 137 13469	127 135 137 14652							
23,000 lb 10,433 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 128 134 7491	109 129 134 7844	110 129 134 8238	112 129 134 8669	113 130 134 9083	114 130 134 9523	115 130 134 10003	116 131 134 10596	118 131 134 11280	120 131 134 12119	122 132 134 13114	124 132 134 14348						
22,000 lb 9979 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	105 125 131 6986	104 125 131 7097	106 125 131 7448	107 126 131 7836	108 126 131 8218	109 126 131 8627	110 127 131 9061	111 127 131 9569	113 127 131 10172	115 128 131 10890	117 128 131 11732	119 129 131 12760	121 129 131 14033					
21,000 lb 9525 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	105 121 128 6885	104 121 127 6901	102 121 127 6931	102 122 127 7039	103 122 127 7377	104 122 127 7742	105 123 127 8135	107 123 127 8611	108 124 127 9133	110 124 127 9751	111 124 127 10467	113 125 127 11325	116 125 127 12374					
20,000 lb 9072 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	105 118 125 6783	103 118 125 6797	102 118 125 6824	101 118 124 6857	100 118 124 6881	99 119 124 6916	100 119 124 7266	102 119 124 7681	103 120 124 8152	105 120 124 8707	106 121 124 9319	108 121 124 10042	110 122 124 10914					
19,000 lb 8618 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	105 115 123 6685	103 115 122 6697	102 115 122 6721	101 115 122 6750	100 115 122 6771	99 115 121 6786	97 115 121 6794	96 115 121 6829	98 116 121 7241	100 116 121 7730	101 117 121 8288	103 117 121 8901	105 118 121 9641					
18,000 lb 8165 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	104 111 120 6592	103 112 120 6601	102 112 120 6622	101 112 119 6648	100 112 119 6666	99 112 119 6678	97 112 119 6682	96 112 118 6693	95 112 118 6706	94 112 117 6850	96 113 117 7326	98 113 117 7889	100 114 117 8520					
17,000 lb 7711 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	104 109 119 6502	103 108 118 6510	102 108 117 6528	101 109 117 6550	100 109 117 6565	98 109 116 6574	97 109 116 6576	96 109 116 6582	94 109 115 6590	93 109 114 6561	91 109 114 6510	93 110 114 6933	95 110 114 7500					

WET RUNWAY CONDITION

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Table 30

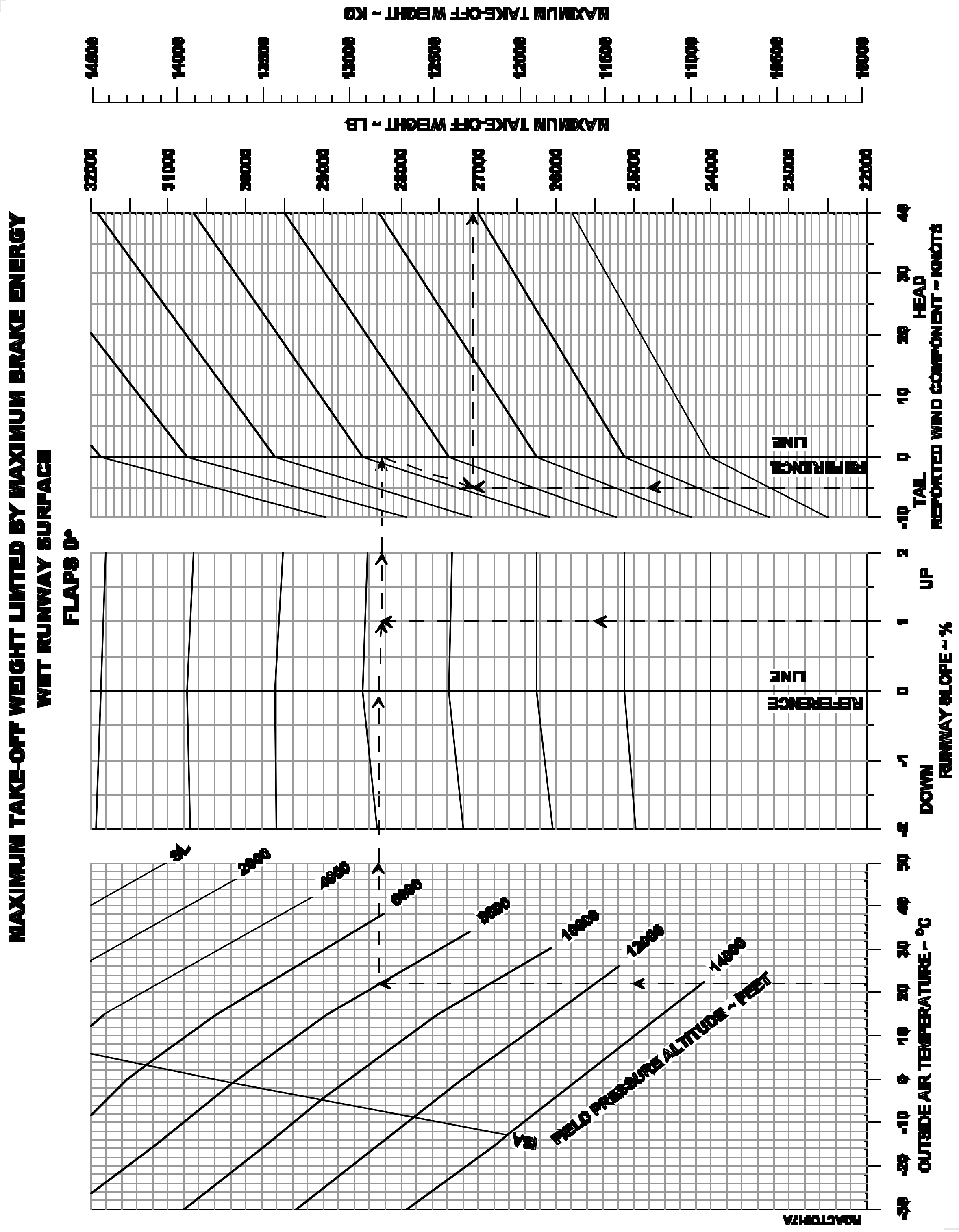
Flaps 0°　　Field Pressure Altitude (14,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	131	132	133	134	136													
	V_R ~ KIAS	143	144	144	144	144													
	V_2 ~ KIAS	146	146	146	146	146													
	TOFL ~ FT	12504	13147	13887	14695	15531													
27,000 lb 12,247 kg	V_1 ~ KIAS	127	128	130	131	132	134												
	V_R ~ KIAS	141	141	142	142	142	142												
	V_2 ~ KIAS	144	144	144	144	144	144												
	TOFL ~ FT	11713	12299	12971	13703	14452	15287												
26,000 lb 11,793 kg	V_1 ~ KIAS	124	125	126	127	128	130	131											
	V_R ~ KIAS	139	139	139	140	140	140	140											
	V_2 ~ KIAS	142	142	142	142	142	142	142											
	TOFL ~ FT	10933	11463	12069	12729	13402	14142	15001											
25,000 lb 11,340 kg	V_1 ~ KIAS	119	120	122	123	124	125	126	128	130									
	V_R ~ KIAS	136	136	136	137	137	137	137	138	138									
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140									
	TOFL ~ FT	10067	10550	11094	11677	12272	12923	13668	14581	15702									
24,000 lb 10,886 kg	V_1 ~ KIAS	115	116	117	118	119	120	122	123	125	127								
	V_R ~ KIAS	133	133	133	133	134	134	134	134	135	135								
	V_2 ~ KIAS	137	137	137	137	137	137	137	137	137	137								
	TOFL ~ FT	9235	9665	10142	10669	11192	11763	12409	13202	14158	15341								
23,000 lb 10,433 kg	V_1 ~ KIAS	110	111	113	114	115	116	117	118	120	122	124							
	V_R ~ KIAS	129	129	130	130	130	131	131	131	131	132	132							
	V_2 ~ KIAS	134	134	134	134	134	134	134	134	134	134	134							
	TOFL ~ FT	8398	8799	9240	9706	10165	10668	11231	11916	12735	13729	14925							
22,000 lb 9979 kg	V_1 ~ KIAS	106	107	108	109	110	111	112	113	115	117	119	121						
	V_R ~ KIAS	125	126	126	126	127	127	127	128	128	128	129	129						
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	131						
	TOFL ~ FT	7595	7952	8357	8791	9212	9655	10142	10738	11440	12282	13279	14490						
21,000 lb 9525 kg	V_1 ~ KIAS	103	102	103	104	105	106	107	109	110	112	113	116	118					
	V_R ~ KIAS	122	122	122	123	123	123	123	124	124	125	125	125	126					
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	128	128					
	TOFL ~ FT	7125	7156	7503	7889	8272	8683	9117	9630	10243	10957	11791	12785	14016					
20,000 lb 9072 kg	V_1 ~ KIAS	103	102	100	99	100	101	102	104	105	107	108	110	112					
	V_R ~ KIAS	118	118	118	119	119	119	120	120	120	121	121	122	122					
	V_2 ~ KIAS	125	124	124	124	124	124	124	124	124	124	124	124	124					
	TOFL ~ FT	7015	7044	7075	7105	7384	7747	8143	8611	9142	9754	10463	11286	12287					
19,000 lb 8618 kg	V_1 ~ KIAS	103	101	100	99	98	97	97	98	100	102	103	105	107					
	V_R ~ KIAS	115	115	115	115	115	115	116	116	116	117	117	118	118					
	V_2 ~ KIAS	122	122	122	121	121	121	121	121	121	121	121	121	121					
	TOFL ~ FT	6909	6935	6963	6989	7005	7032	7235	7650	8126	8675	9271	9982	10802					
18,000 lb 8165 kg	V_1 ~ KIAS	102	101	100	99	98	97	96	94	95	96	98	100	102					
	V_R ~ KIAS	112	112	112	112	112	112	112	113	113	113	113	114	114					
	V_2 ~ KIAS	120	120	119	119	119	119	118	118	118	118	118	118	118					
	TOFL ~ FT	6808	6831	6856	6878	6892	6915	6936	6973	7193	7670	8219	8820	9510					
17,000 lb 7711 kg	V_1 ~ KIAS	102	101	100	99	98	97	95	94	93	91	93	95	97					
	V_R ~ KIAS	109	109	109	109	109	109	109	109	109	109	110	110	111					
	V_2 ~ KIAS	118	117	117	117	116	116	116	115	114	114	114	114	114					
	TOFL ~ FT	6711	6732	6754	6773	6783	6803	6820	6852	6835	6799	7224	7762	8402					

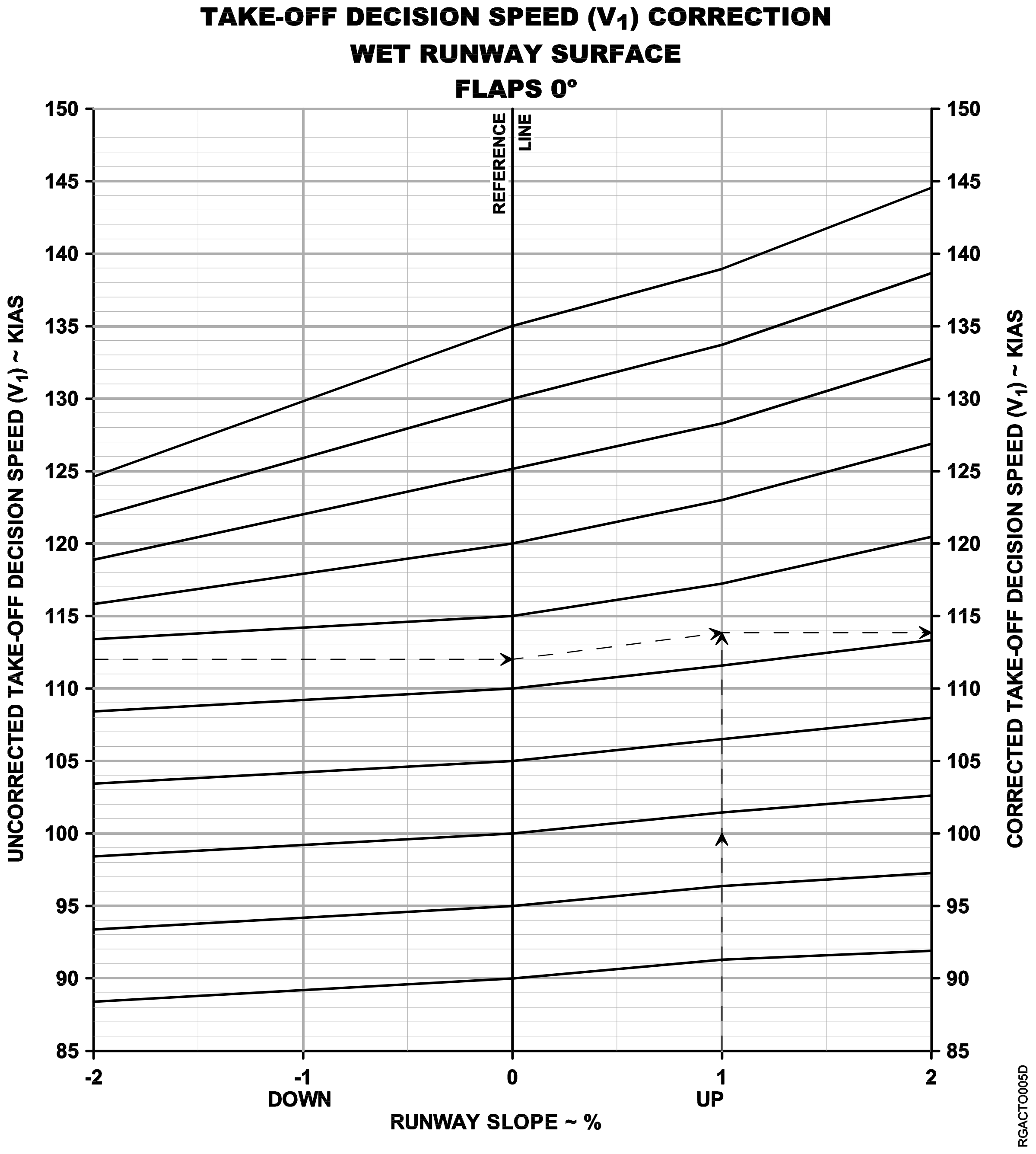
WET RUNWAY CONDITION

RGACTO001C

NOTE: *Check WAT limit first; the more restrictive of the WAT limit or Brake Energy limit must be used.*



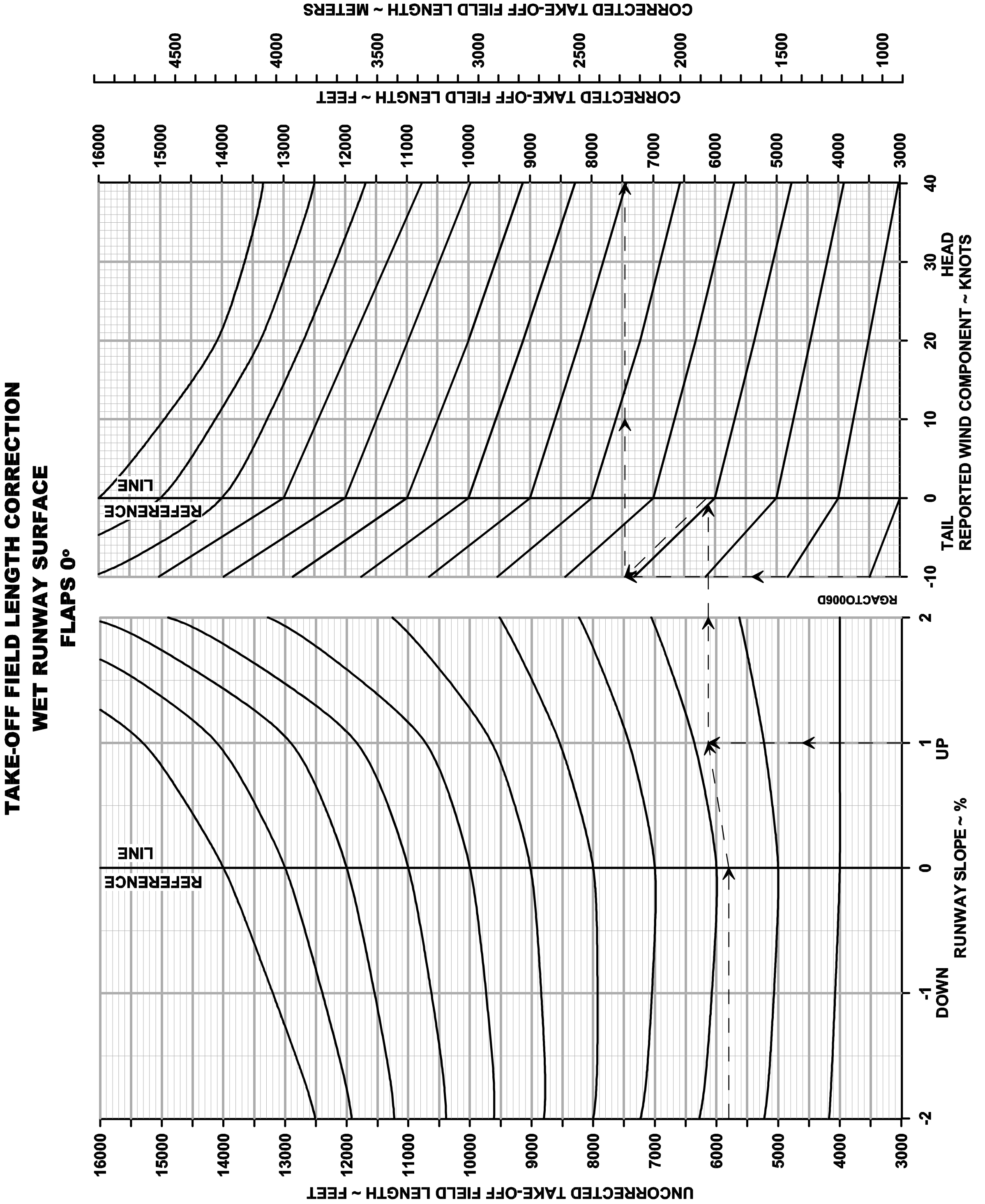
Maximum Take-Off Weight Limited by Maximum Brake Energy Wet Runway (Flaps 0°)
Figure 3



Take-Off Decision Speed (V_1) - Wet Runway (Flaps 0°)

Corrected for Runway Gradient

Figure 4



Take-Off Field Length - Wet Runway (Flaps 0°)

Corrected for Runway Gradient and Wind Component

Figure 5

Table 31

Flaps 15° **Field Pressure Altitude (Sea Level)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	132	132	132	132	132	132	132	132	132	132	132
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140
	TOFL ~ FT	5914	6016	6119	6224	6330	6436	6543	6650	6758	6867	6973
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138
	TOFL ~ FT	5907	6009	6113	6217	6322	6429	6535	6641	6749	6858	6964
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126	126
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	135
	TOFL ~ FT	5904	6006	6110	6214	6320	6425	6532	6638	6745	6853	6959
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	123
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133
	TOFL ~ FT	5879	5981	6084	6188	6292	6398	6503	6608	6715	6822	6927
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131
	TOFL ~ FT	5847	5948	6051	6154	6258	6362	6467	6571	6677	6783	6887
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	116
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128
	TOFL ~ FT	5811	5912	6014	6116	6220	6323	6427	6530	6634	6739	6843
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_2 ~ KIAS	127	127	127	127	127	127	127	126	126	126	126
	TOFL ~ FT	5775	5876	5977	6078	6181	6284	6386	6489	6592	6695	6798
21,000 lb 9526 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	126	126	126	126	126
	TOFL ~ FT	5741	5841	5941	6042	6144	6246	6347	6449	6551	6653	6755
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127
	TOFL ~ FT	5706	5806	5906	6006	6107	6208	6308	6409	6510	6611	6711
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127
	TOFL ~ FT	5676	5775	5875	5974	6074	6174	6274	6373	6473	6573	6672
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	128	128	128	128	127	127	127	127	127	127	127
	TOFL ~ FT	5650	5749	5848	5947	6046	6145	6244	6343	6441	6540	6639
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	127	127
	TOFL ~ FT	5630	5729	5827	5925	6024	6122	6220	6318	6415	6513	6611

COMPACTED SNOW RUNWAY CONDITION

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Table 32

Flaps 15° Field Pressure Altitude (1000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	132	132	132	132	132	132	132	132	132	132	132
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140
	TOFL ~ FT	6111	6216	6322	6431	6541	6651	6761	6871	6984	7096	7241
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138
	TOFL ~ FT	6103	6208	6314	6423	6532	6642	6752	6862	6974	7086	7228
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126	126
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	135	135	135
	TOFL ~ FT	6099	6204	6311	6419	6528	6638	6748	6857	6969	7080	7220
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	123
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133
	TOFL ~ FT	6071	6177	6283	6391	6499	6608	6717	6826	6937	7047	7184
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130
	TOFL ~ FT	6037	6142	6248	6355	6463	6571	6679	6787	6896	7006	7140
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	116
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128
	TOFL ~ FT	5999	6104	6209	6315	6422	6529	6636	6743	6851	6960	7091
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_2 ~ KIAS	127	127	127	127	126	126	126	126	126	126	126
	TOFL ~ FT	5961	6065	6169	6275	6381	6487	6593	6699	6806	6913	7042
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	126	126	126	126	126	126	126	126
	TOFL ~ FT	5925	6028	6132	6236	6342	6447	6552	6657	6763	6869	6994
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	126	126
	TOFL ~ FT	5888	5991	6094	6198	6302	6406	6511	6614	6719	6824	6946
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127
	TOFL ~ FT	5855	5958	6060	6164	6267	6370	6474	6576	6680	6783	6903
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127
	TOFL ~ FT	5828	5930	6032	6134	6237	6339	6442	6544	6646	6748	6865
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	128	128	128	128	128	128	128	127	127	127	127
	TOFL ~ FT	5805	5907	6008	6111	6212	6314	6415	6517	6618	6719	6833

**COMPACTED SNOW
RUNWAY CONDITION**

RGACTO003C

Table 33

Flaps 15° **Field Pressure Altitude (2000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	132	132	132	132	132	132	132	132	132	132	133
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140
	TOFL ~ FT	6318	6425	6537	6650	6764	6878	6993	7109	7226	7362	7499
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	137
	TOFL ~ FT	6309	6416	6528	6641	6755	6868	6983	7098	7215	7349	7479
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126	127
	V_2 ~ KIAS	136	136	136	136	136	135	135	135	135	135	135
	TOFL ~ FT	6303	6412	6524	6636	6750	6863	6977	7092	7208	7341	7465
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	124
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133
	TOFL ~ FT	6274	6382	6494	6606	6719	6831	6945	7058	7174	7305	7422
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	130
	TOFL ~ FT	6238	6346	6456	6568	6680	6791	6904	7017	7131	7260	7371
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	117
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128
	TOFL ~ FT	6198	6305	6415	6526	6637	6747	6859	6971	7084	7210	7315
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	114
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126
	TOFL ~ FT	6157	6264	6373	6483	6593	6703	6813	6924	7035	7160	7258
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125
	TOFL ~ FT	6118	6225	6333	6442	6551	6660	6769	6879	6989	7112	7203
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	126	126	126	126	125
	TOFL ~ FT	6079	6185	6293	6401	6509	6617	6725	6833	6942	7063	7148
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	125
	TOFL ~ FT	6044	6150	6257	6364	6471	6578	6685	6793	6900	7019	7097
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	111
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	126
	TOFL ~ FT	6014	6120	6226	6332	6439	6545	6651	6757	6863	6980	7051
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	111
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	111
	V_2 ~ KIAS	128	128	128	128	127	127	127	127	127	127	126
	TOFL ~ FT	5989	6095	6201	6306	6412	6517	6622	6727	6833	6948	7012

COMPACTED SNOW RUNWAY CONDITION

RGACTO003C

Table 34

Flaps 15° **Field Pressure Altitude (3000 feet)**

T.O. WEIGHT		**OUTSIDE AIR TEMPERATURE ~ °C**										
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**
28,000 lb 12,701 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 132 140 6526	113 132 140 6643	113 132 140 6761	113 132 140 6878	113 132 140 6997	113 132 140 7116	113 132 140 7235	113 132 140 7356	113 133 140 7491	113 133 140 7633	111 133 139 7592
27,000 lb 12,247 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 130 138 6516	113 130 138 6633	113 130 138 6750	113 130 138 6868	113 130 138 6986	113 130 138 7105	113 130 138 7223	113 130 138 7344	113 130 138 7478	113 130 137 7614	111 130 137 7568
26,000 lb 11,793 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 126 135 6511	113 126 135 6627	113 126 135 6745	113 126 135 6862	113 126 135 6980	113 126 135 7099	113 126 135 7216	113 126 135 7337	113 126 135 7469	113 127 135 7599	110 127 135 7549
25,000 lb 11,340 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 123 133 6480	113 123 133 6596	113 123 133 6713	113 123 133 6830	113 123 133 6947	113 123 133 7065	113 123 133 7182	113 123 133 7301	113 123 133 7432	112 123 133 7556	110 124 132 7501
24,000 lb 10,886 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 120 131 6442	113 120 131 6557	113 120 131 6673	113 120 131 6789	113 120 131 6906	113 120 131 7022	113 120 130 7138	113 120 130 7256	113 120 130 7386	112 120 130 7504	110 120 130 7445
23,000 lb 10,433 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 116 128 6400	113 116 128 6515	113 116 128 6630	113 116 128 6745	113 116 128 6860	113 116 128 6976	113 116 128 7091	113 116 128 7207	113 116 128 7335	112 116 128 7447	110 117 127 7384
22,000 lb 9979 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 113 126 6358	113 113 126 6471	113 113 126 6586	113 113 126 6699	113 113 126 6814	113 113 126 6928	113 113 126 7042	113 113 126 7158	113 113 126 7283	112 114 126 7389	110 114 125 7323
21,000 lb 9525 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 113 126 6317	112 112 126 6430	112 112 126 6543	112 112 126 6656	112 112 126 6769	112 112 126 6883	112 112 126 6995	112 112 126 7110	112 112 126 7233	112 112 125 7334	110 111 123 7264
20,000 lb 9072 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 127 6276	112 112 127 6388	112 112 127 6500	112 112 126 6612	112 112 126 6725	112 112 126 6837	112 112 126 6948	112 112 126 7061	112 112 126 7183	112 112 125 7277	110 110 123 7204
19,000 lb 8618 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 127 6239	112 112 127 6350	112 112 127 6462	112 112 127 6573	112 112 127 6684	112 112 127 6796	112 112 127 6906	112 112 127 7018	112 112 126 7138	112 112 125 7226	110 110 123 7149
18,000 lb 8165 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 127 6207	112 112 127 6318	112 112 127 6429	112 112 127 6539	112 112 127 6649	112 112 127 6759	112 112 127 6869	112 112 127 6979	112 112 127 7097	111 112 126 7180	109 110 123 7099
17,000 lb 7711 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 127 6181	112 112 127 6291	112 112 127 6401	112 112 127 6511	112 112 127 6620	112 112 127 6729	112 112 127 6838	112 112 127 6947	112 112 127 7063	111 111 126 7140	109 109 123 7055

COMPACTED SNOW RUNWAY CONDITION

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Table 35

Flaps 15° **Field Pressure Altitude (4000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	110
	V_R ~ KIAS	132	132	132	132	132	133	133	133	133	133	133
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	139	139
	TOFL ~ FT	6750	6876	7000	7124	7249	7367	7489	7625	7772	7756	7930
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	109
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	137	137	137
	TOFL ~ FT	6739	6865	6988	7112	7236	7355	7476	7611	7752	7731	7677
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	109
	V_R ~ KIAS	126	126	126	126	126	126	126	127	127	127	127
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	134
	TOFL ~ FT	6732	6858	6981	7104	7228	7346	7467	7601	7737	7711	7653
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	111	108
	V_R ~ KIAS	123	123	123	123	123	123	123	123	124	124	124
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	132	132
	TOFL ~ FT	6700	6824	6947	7069	7192	7310	7430	7563	7693	7663	7600
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	110	108
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	121
	V_2 ~ KIAS	131	131	130	130	130	130	130	130	130	130	129
	TOFL ~ FT	6660	6783	6905	7026	7148	7265	7384	7515	7640	7605	7539
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	110	108
	V_R ~ KIAS	116	116	116	116	116	116	116	116	117	117	117
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	127	126
	TOFL ~ FT	6616	6738	6858	6979	7099	7215	7334	7462	7581	7543	7473
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	110	108
	V_R ~ KIAS	113	113	113	113	113	113	113	113	114	114	115
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	124
	TOFL ~ FT	6571	6692	6811	6930	7050	7165	7282	7409	7523	7481	7406
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108
	V_R ~ KIAS	113	113	112	112	112	112	112	112	112	111	112
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	122
	TOFL ~ FT	6528	6647	6766	6884	7002	7117	7232	7358	7465	7420	7342
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	120
	TOFL ~ FT	6484	6602	6720	6837	6954	7068	7182	7306	7408	7358	7277
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108
	V_2 ~ KIAS	127	127	127	127	127	126	126	126	125	123	120
	TOFL ~ FT	6445	6562	6679	6795	6911	7023	7137	7259	7355	7302	7217
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	111	110	108
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	123	121
	TOFL ~ FT	6411	6527	6643	6758	6873	6984	7097	7217	7308	7251	7163
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	111	109	107
	V_R ~ KIAS	112	112	112	112	112	112	112	112	111	110	108
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	124	121
	TOFL ~ FT	6383	6498	6613	6727	6840	6951	7063	7181	7267	7206	7114

COMPACTED SNOW RUNWAY CONDITION

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Table 36

Flaps 15° **Field Pressure Altitude (5000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V$_1$ ~ KIAS	113	113	113	113	113	113	113	112	110	110	112
	V$_R$ ~ KIAS	132	133	133	133	133	133	133	133	133	133	133
	V$_2$ ~ KIAS	140	140	140	140	140	140	140	140	139	139	138
	TOFL ~ FT	6991	7125	7253	7385	7507	7630	7782	7828	7840	8064	8560
27,000 lb 12,247 kg	V$_1$ ~ KIAS	113	113	113	113	113	113	113	112	110	109	108
	V$_R$ ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V$_2$ ~ KIAS	138	138	138	138	138	138	138	137	137	137	136
	TOFL ~ FT	6979	7113	7240	7372	7494	7616	7768	7810	7816	7837	7942
26,000 lb 11,793 kg	V$_1$ ~ KIAS	113	113	113	113	113	113	113	112	110	109	107
	V$_R$ ~ KIAS	126	126	126	127	127	127	127	127	127	127	127
	V$_2$ ~ KIAS	135	135	135	135	135	135	135	135	135	134	134
	TOFL ~ FT	6972	7105	7232	7363	7485	7608	7758	7796	7798	7813	7748
25,000 lb 11,340 kg	V$_1$ ~ KIAS	113	113	113	113	113	113	113	112	110	109	106
	V$_R$ ~ KIAS	123	123	123	123	123	123	123	123	124	124	124
	V$_2$ ~ KIAS	133	133	133	133	133	133	133	132	132	132	131
	TOFL ~ FT	6939	7070	7197	7327	7448	7571	7718	7753	7750	7760	7692
24,000 lb 10,886 kg	V$_1$ ~ KIAS	113	113	113	113	113	113	113	112	110	108	106
	V$_R$ ~ KIAS	120	120	120	120	120	120	120	120	120	121	121
	V$_2$ ~ KIAS	130	130	130	130	130	130	130	130	130	129	129
	TOFL ~ FT	6897	7027	7153	7281	7402	7524	7669	7700	7693	7699	7626
23,000 lb 10,433 kg	V$_1$ ~ KIAS	113	113	113	113	113	113	113	111	110	108	106
	V$_R$ ~ KIAS	116	116	116	116	116	116	116	116	117	117	117
	V$_2$ ~ KIAS	128	128	128	128	128	128	128	127	127	126	126
	TOFL ~ FT	6851	6980	7104	7231	7352	7472	7615	7643	7632	7632	7556
22,000 lb 9979 kg	V$_1$ ~ KIAS	113	113	113	113	113	113	113	111	110	108	106
	V$_R$ ~ KIAS	113	113	113	113	113	113	113	114	114	115	115
	V$_2$ ~ KIAS	126	126	126	126	126	126	126	125	125	125	124
	TOFL ~ FT	6805	6931	7055	7180	7300	7420	7561	7585	7569	7565	7486
21,000 lb 9525 kg	V$_1$ ~ KIAS	112	112	112	112	112	112	112	111	110	108	106
	V$_R$ ~ KIAS	113	113	113	113	112	112	112	111	111	112	112
	V$_2$ ~ KIAS	126	126	126	126	126	126	126	124	123	122	122
	TOFL ~ FT	6760	6885	7008	7131	7250	7370	7508	7529	7509	7500	7418
20,000 lb 9072 kg	V$_1$ ~ KIAS	112	112	112	112	112	112	112	111	109	108	106
	V$_R$ ~ KIAS	112	112	112	112	112	112	112	111	110	108	109
	V$_2$ ~ KIAS	126	126	126	126	126	126	126	124	122	120	120
	TOFL ~ FT	6715	6838	6960	7082	7201	7319	7455	7473	7449	7435	7349
19,000 lb 8618 kg	V$_1$ ~ KIAS	112	112	112	112	112	112	112	111	109	108	106
	V$_R$ ~ KIAS	112	112	112	112	112	112	112	111	109	108	106
	V$_2$ ~ KIAS	127	126	126	126	126	126	126	125	123	120	118
	TOFL ~ FT	6675	6796	6917	7038	7155	7273	7407	7422	7393	7375	7286
18,000 lb 8165 kg	V$_1$ ~ KIAS	112	112	112	112	112	112	112	111	109	108	106
	V$_R$ ~ KIAS	112	112	112	112	112	112	112	111	109	108	106
	V$_2$ ~ KIAS	127	127	127	127	127	127	126	125	123	121	118
	TOFL ~ FT	6639	6759	6879	6999	7116	7233	7364	7376	7344	7320	7228
17,000 lb 7711 kg	V$_1$ ~ KIAS	112	112	112	112	112	112	112	110	109	108	106
	V$_R$ ~ KIAS	112	112	112	112	112	112	112	111	109	108	106
	V$_2$ ~ KIAS	127	127	127	127	127	127	127	125	123	121	118
	TOFL ~ FT	6610	6729	6848	6966	7082	7199	7328	7337	7300	7272	7177

COMPACTED SNOW RUNWAY CONDITION

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Table 37

Flaps 15° **Field Pressure Altitude (6000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	113	113	113	113	111	110	110	112	114
	V_R ~ KIAS	133	133	133	133	133	133	133	133	133	133	133
	V_2 ~ KIAS	140	140	140	140	140	140	139	139	139	138	138
	TOFL ~ FT	7186	7340	7495	7649	7799	7883	7924	7965	8234	8720	9241
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	110	109	108	110
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	138	137	137	137	137	136	136
	TOFL ~ FT	7178	7330	7483	7636	7785	7867	7905	7941	8006	8092	8583
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	110	109	107	105
	V_R ~ KIAS	126	126	127	127	127	127	127	127	127	127	127
	V_2 ~ KIAS	135	135	135	135	135	135	135	134	134	134	133
	TOFL ~ FT	7174	7325	7476	7628	7776	7857	7891	7923	7982	7933	7934
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	110	109	107	105
	V_R ~ KIAS	123	123	123	123	123	123	123	124	124	124	124
	V_2 ~ KIAS	133	133	133	133	133	133	132	132	132	131	131
	TOFL ~ FT	7142	7291	7441	7590	7737	7816	7847	7875	7928	7876	7803
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	110	109	107	105
	V_R ~ KIAS	120	120	120	120	120	120	120	120	121	121	121
	V_2 ~ KIAS	130	130	130	130	130	130	130	129	129	129	128
	TOFL ~ FT	7101	7248	7396	7544	7688	7765	7794	7817	7865	7809	7733
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	110	108	107	104
	V_R ~ KIAS	116	116	116	116	116	116	117	117	117	118	118
	V_2 ~ KIAS	128	128	128	128	128	128	127	127	126	126	125
	TOFL ~ FT	7057	7201	7347	7492	7635	7710	7736	7756	7798	7738	7658
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	109	108	106	104
	V_R ~ KIAS	113	113	113	113	113	113	114	114	115	115	115
	V_2 ~ KIAS	126	126	126	126	126	126	125	125	125	124	123
	TOFL ~ FT	7011	7153	7297	7440	7581	7655	7678	7693	7730	7667	7584
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	112	112	112	111	109	108	106	104
	V_R ~ KIAS	112	112	112	113	112	112	111	111	112	112	112
	V_2 ~ KIAS	126	126	126	126	126	125	123	123	122	122	121
	TOFL ~ FT	6967	7107	7249	7390	7529	7601	7621	7632	7664	7597	7511
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	110	109	108	106	104
	V_R ~ KIAS	112	112	112	112	112	112	111	109	108	109	109
	V_2 ~ KIAS	126	126	126	126	126	125	124	122	120	120	119
	TOFL ~ FT	6923	7061	7200	7339	7477	7547	7564	7572	7598	7528	7438
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	111	110	109	108	106	104
	V_R ~ KIAS	112	112	112	112	112	112	110	109	108	106	106
	V_2 ~ KIAS	127	126	126	126	126	125	124	122	120	118	117
	TOFL ~ FT	6884	7020	7157	7294	7430	7498	7513	7516	7537	7464	7371
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	111	110	109	108	106	104
	V_R ~ KIAS	112	112	112	112	112	111	110	109	108	106	104
	V_2 ~ KIAS	127	127	127	127	127	126	124	122	121	118	116
	TOFL ~ FT	6850	6984	7119	7254	7388	7455	7467	7466	7482	7405	7310
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	111	110	109	108	106	104
	V_R ~ KIAS	112	112	112	112	112	111	110	109	108	106	104
	V_2 ~ KIAS	127	127	127	127	127	126	124	123	121	119	116
	TOFL ~ FT	6823	6955	7088	7220	7353	7419	7428	7423	7434	7354	7255

COMPACTED SNOW RUNWAY CONDITION

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Table 38

Flaps 15° **Field Pressure Altitude (7000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	112	111	109	111	112	114	
	V_R ~ KIAS	132	132	133	133	133	133	133	133	133	133	
	V_2 ~ KIAS	140	140	140	140	140	139	139	139	138	138	
	TOFL ~ FT	7400	7580	7767	7942	7984	8015	8053	8443	8877	9407	
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	112	110	109	108	108	109	111
	V_R ~ KIAS	129	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	137	137	137	136	136	136	135
	TOFL ~ FT	7396	7572	7756	7927	7967	7994	8029	8042	8239	8739	9267
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	112	110	109	108	106	105	107
	V_R ~ KIAS	126	126	127	127	127	127	127	127	127	127	127
	V_2 ~ KIAS	136	135	135	135	135	135	134	134	134	133	133
	TOFL ~ FT	7397	7570	7750	7917	7955	7980	8011	8020	8015	8079	8571
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	112	110	109	108	106	105	103
	V_R ~ KIAS	123	123	123	123	123	123	124	124	124	124	124
	V_2 ~ KIAS	133	133	133	133	132	132	132	131	131	131	130
	TOFL ~ FT	7369	7538	7713	7876	7912	7934	7963	7968	7958	7966	7903
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	111	110	109	108	106	105	103
	V_R ~ KIAS	120	120	120	120	120	120	120	121	121	121	121
	V_2 ~ KIAS	131	131	130	130	130	130	129	129	128	128	128
	TOFL ~ FT	7331	7496	7668	7826	7860	7879	7905	7906	7892	7895	7828
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	111	110	109	108	106	104	102
	V_R ~ KIAS	116	116	116	116	116	117	117	117	117	118	118
	V_2 ~ KIAS	128	128	128	128	127	127	127	126	126	125	125
	TOFL ~ FT	7289	7450	7617	7771	7803	7820	7843	7840	7822	7820	7749
22,000 lb 9979 kg	V_1 ~ KIAS	112	112	113	112	111	110	109	107	106	104	102
	V_R ~ KIAS	113	113	113	113	114	114	114	115	115	115	115
	V_2 ~ KIAS	126	126	126	126	125	125	125	124	124	123	123
	TOFL ~ FT	7247	7404	7566	7715	7745	7760	7780	7773	7751	7744	7670
21,000 lb 9526 kg	V_1 ~ KIAS	112	112	112	112	111	110	109	107	106	104	102
	V_R ~ KIAS	112	112	112	112	111	111	111	112	112	112	113
	V_2 ~ KIAS	126	126	126	125	124	123	123	122	122	121	120
	TOFL ~ FT	7207	7359	7517	7661	7690	7702	7719	7709	7683	7671	7593
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	111	110	109	107	106	104	102
	V_R ~ KIAS	112	112	112	112	111	110	109	108	109	109	109
	V_2 ~ KIAS	127	126	126	126	124	123	121	120	119	119	118
	TOFL ~ FT	7166	7314	7467	7607	7634	7644	7658	7644	7614	7598	7516
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	111	110	108	107	105	104	102
	V_R ~ KIAS	112	112	112	112	111	110	109	107	106	106	106
	V_2 ~ KIAS	127	127	126	126	125	123	121	120	118	117	116
	TOFL ~ FT	7131	7275	7423	7559	7584	7591	7602	7585	7551	7530	7445
18,000 lb 8166 kg	V_1 ~ KIAS	112	112	112	112	111	109	108	107	105	104	102
	V_R ~ KIAS	112	112	112	112	111	109	108	107	105	104	103
	V_2 ~ KIAS	127	127	127	126	125	123	122	120	118	116	114
	TOFL ~ FT	7101	7241	7384	7516	7539	7545	7553	7532	7494	7468	7380
17,000 lb 7711 kg	V_1 ~ KIAS	111	111	112	111	110	109	108	107	105	104	102
	V_R ~ KIAS	111	112	112	112	110	109	108	107	105	104	102
	V_2 ~ KIAS	128	127	127	126	125	124	122	120	118	116	114
	TOFL ~ FT	7078	7214	7353	7480	7502	7505	7511	7487	7445	7414	7322

COMPACTED SNOW RUNWAY CONDITION

RGACTO003C

Table 39

Flaps 15° **Field Pressure Altitude (8000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	112	111	110	110	111	112	114		
	V_R ~ KIAS	132	133	133	133	133	133	133	133	133		
	V_2 ~ KIAS	140	140	140	139	139	139	139	138	138		
	TOFL ~ FT	7746	7938	8033	8082	8120	8332	8698	9135	9616		
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	112	111	110	109	107	108	110	111	
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	
	V_2 ~ KIAS	138	138	137	137	137	137	136	136	136	135	
	TOFL ~ FT	7738	7926	8017	8063	8098	8121	8134	8481	8934	9452	
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	112	111	110	109	107	106	105	107	108
	V_R ~ KIAS	126	126	127	127	127	127	127	127	127	127	127
	V_2 ~ KIAS	135	135	135	135	134	134	134	133	133	133	132
	TOFL ~ FT	7735	7919	8007	8050	8081	8102	8111	8140	8262	8744	9270
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	112	111	110	108	107	106	105	103	104
	V_R ~ KIAS	123	123	123	123	124	124	124	124	124	124	124
	V_2 ~ KIAS	133	133	133	132	132	132	131	131	131	130	130
	TOFL ~ FT	7702	7881	7965	8005	8034	8052	8058	8083	8139	8094	8507
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	112	111	110	108	107	106	105	103	101
	V_R ~ KIAS	120	120	120	120	120	120	121	121	121	121	121
	V_2 ~ KIAS	131	130	130	130	129	129	129	128	128	128	127
	TOFL ~ FT	7659	7834	7914	7951	7977	7992	7996	8016	8067	8018	7971
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	112	111	109	108	107	106	105	103	101
	V_R ~ KIAS	116	116	116	117	117	117	117	117	118	118	118
	V_2 ~ KIAS	128	128	127	127	127	126	126	126	125	125	124
	TOFL ~ FT	7612	7782	7859	7892	7916	7928	7930	7945	7991	7938	7886
22,000 lb **9979 kg**	V_1 ~ KIAS	112	113	112	111	109	108	107	106	104	103	101
	V_R ~ KIAS	113	113	113	114	114	114	115	115	115	115	115
	V_2 ~ KIAS	126	126	126	125	125	124	124	124	123	123	122
	TOFL ~ FT	7565	7729	7802	7833	7854	7864	7862	7874	7914	7857	7801
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	110	109	108	107	105	104	102	101
	V_R ~ KIAS	112	112	112	111	111	111	112	112	112	113	113
	V_2 ~ KIAS	126	126	125	123	123	122	122	121	121	121	120
	TOFL ~ FT	7519	7679	7748	7776	7794	7802	7798	7805	7839	7779	7719
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	111	110	109	108	107	105	104	102	101
	V_R ~ KIAS	112	112	112	110	109	108	108	109	109	110	110
	V_2 ~ KIAS	126	126	125	123	122	120	120	119	119	118	118
	TOFL ~ FT	7474	7628	7694	7719	7734	7739	7733	7736	7765	7701	7637
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	111	110	109	108	106	105	104	102	100
	V_R ~ KIAS	112	112	111	110	109	108	107	105	106	106	107
	V_2 ~ KIAS	127	126	125	124	122	121	119	117	117	116	116
	TOFL ~ FT	7433	7583	7645	7667	7680	7682	7674	7673	7696	7628	7560
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	111	110	109	108	106	105	104	102	100
	V_R ~ KIAS	112	112	111	110	109	108	106	105	104	103	104
	V_2 ~ KIAS	127	127	125	124	122	121	119	117	116	114	114
	TOFL ~ FT	7399	7544	7602	7622	7632	7632	7621	7616	7634	7562	7490
17,000 lb **7711 kg**	V_1 ~ KIAS	111	112	111	110	109	107	106	105	104	102	100
	V_R ~ KIAS	112	112	111	110	109	107	106	105	104	102	101
	V_2 ~ KIAS	127	127	126	124	123	121	119	118	116	114	112
	TOFL ~ FT	7372	7511	7566	7583	7592	7589	7576	7567	7579	7504	7428

COMPACTED SNOW RUNWAY CONDITION

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Table 40

Flaps 15° **Field Pressure Altitude (9000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS	113	112	110	110	111	112	113				
	V_R ~ KIAS	133	133	133	133	133	133	133				
	V_2 ~ KIAS	140	140	139	139	139	138	138				
	TOFL ~ FT	8087	8130	8175	8271	8625	9003	9407				
27,000 lb 12,247 kg	V_1 ~ KIAS	113	112	110	109	108	108	109	110			
	V_R ~ KIAS	130	130	130	130	130	130	130	130			
	V_2 ~ KIAS	137	137	137	137	136	136	136	135			
	TOFL ~ FT	8072	8112	8154	8190	8212	8365	8735	9171			
26,000 lb 11,793 kg	V_1 ~ KIAS	113	111	110	109	108	106	105	105	107	108	
	V_R ~ KIAS	127	127	127	127	127	127	127	127	127	127	
	V_2 ~ KIAS	135	135	135	134	134	134	133	133	133	132	
	TOFL ~ FT	8062	8100	8139	8171	8191	8203	8230	8481	8927	9449	
25,000 lb 11,340 kg	V_1 ~ KIAS	113	111	110	109	108	106	105	104	102	104	106
	V_R ~ KIAS	123	123	124	124	124	124	124	124	124	124	124
	V_2 ~ KIAS	133	132	132	132	131	131	131	130	130	130	129
	TOFL ~ FT	8021	8057	8093	8122	8139	8148	8172	8182	8193	8673	9200
24,000 lb 10,886 kg	V_1 ~ KIAS	113	111	110	109	108	106	105	104	102	101	101
	V_R ~ KIAS	120	120	120	120	121	121	121	121	121	121	121
	V_2 ~ KIAS	130	130	130	129	129	129	128	128	127	127	127
	TOFL ~ FT	7971	8004	8037	8064	8078	8084	8105	8111	8117	8137	8425
23,000 lb 10,433 kg	V_1 ~ KIAS	112	111	110	109	107	106	105	104	102	101	99
	V_R ~ KIAS	116	117	117	117	117	117	117	118	118	118	118
	V_2 ~ KIAS	128	127	127	127	126	126	125	125	125	124	124
	TOFL ~ FT	7915	7946	7976	8000	8012	8016	8034	8035	8036	8051	8003
22,000 lb 9979 kg	V_1 ~ KIAS	112	111	110	109	107	106	105	104	102	101	99
	V_R ~ KIAS	113	114	114	114	114	115	115	115	115	115	115
	V_2 ~ KIAS	126	125	125	125	124	124	124	123	123	122	122
	TOFL ~ FT	7860	7888	7916	7936	7946	7947	7962	7959	7956	7965	7912
21,000 lb 9525 kg	V_1 ~ KIAS	112	111	110	109	107	106	105	103	102	101	99
	V_R ~ KIAS	112	111	111	111	111	112	112	112	113	113	113
	V_2 ~ KIAS	125	124	123	123	122	122	121	121	120	120	119
	TOFL ~ FT	7806	7832	7857	7875	7882	7881	7893	7886	7878	7882	7825
20,000 lb 9072 kg	V_1 ~ KIAS	112	111	110	108	107	106	105	103	102	101	99
	V_R ~ KIAS	112	111	110	108	108	108	109	109	109	110	110
	V_2 ~ KIAS	125	124	122	121	120	120	119	119	118	118	117
	TOFL ~ FT	7753	7776	7798	7813	7818	7814	7824	7813	7800	7799	7738
19,000 lb 8618 kg	V_1 ~ KIAS	112	111	109	108	107	106	105	103	102	100	99
	V_R ~ KIAS	112	111	110	108	107	106	105	106	106	107	107
	V_2 ~ KIAS	126	124	123	121	120	118	117	117	116	116	115
	TOFL ~ FT	7704	7726	7745	7758	7760	7754	7761	7746	7728	7722	7656
18,000 lb 8165 kg	V_1 ~ KIAS	112	110	109	108	107	106	104	103	102	100	98
	V_R ~ KIAS	112	111	109	108	107	106	104	103	103	104	104
	V_2 ~ KIAS	126	124	123	121	120	118	117	115	114	114	113
	TOFL ~ FT	7663	7682	7699	7709	7708	7700	7704	7686	7663	7651	7582
17,000 lb 7711 kg	V_1 ~ KIAS	111	110	109	108	107	105	104	103	101	100	98
	V_R ~ KIAS	111	110	109	108	107	105	104	103	102	101	101
	V_2 ~ KIAS	126	125	123	122	120	118	117	115	113	112	111
	TOFL ~ FT	7628	7645	7659	7667	7664	7654	7655	7633	7606	7589	7515

COMPACTED SNOW RUNWAY CONDITION

RGACTO003C

Table 41

Flaps 15° **Field Pressure Altitude (10,000 feet)**

COMPACTED SNOW RUNWAY CONDITION

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 133 139 8231	110 133 139 8268	110 133 139 8564	111 133 139 8944	112 133 138 9336	114 133 138 9751					
27,000 lb 12,247 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 130 137 8211	110 130 137 8246	108 130 136 8281	107 130 136 8312	108 130 136 8672	109 130 136 9054	110 130 135 9459				
26,000 lb 11,793 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 127 135 8197	110 127 134 8229	108 127 134 8261	107 127 134 8287	106 127 133 8306	105 127 133 8380	106 127 133 8743	107 127 133 9194			
25,000 lb 11,340 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 124 132 8151	109 124 132 8181	108 124 131 8210	107 124 131 8232	106 124 131 8249	104 124 131 8270	103 124 130 8280	103 124 130 8436	104 124 130 8874	106 124 129 9401	
24,000 lb 10,886 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 120 130 8095	109 120 129 8123	108 121 129 8149	107 121 129 8169	106 121 128 8183	104 121 128 8201	103 121 128 8208	102 121 127 8251	101 121 127 8314	101 121 127 8611	103 121 126 9140
23,000 lb 10,433 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 117 127 8035	109 117 127 8061	108 117 126 8084	107 117 126 8101	106 117 126 8113	104 117 125 8127	103 117 125 8132	102 118 125 8170	101 118 124 8227	99 118 124 8194	99 118 123 8164
22,000 lb 9979 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 114 125 7974	109 114 125 7998	108 114 124 8018	107 115 124 8032	105 115 124 8041	104 115 123 8053	103 115 123 8055	102 115 122 8088	101 115 122 8139	99 115 122 8102	97 116 121 8044
21,000 lb 9525 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 111 123 7916	109 111 123 7937	108 111 122 7955	107 112 122 7967	105 112 121 7973	104 112 121 7982	103 112 121 7981	102 113 120 8010	101 113 120 8054	99 113 119 8013	97 113 119 7950
20,000 lb 9072 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 110 123 7858	109 109 121 7877	108 108 120 7892	106 108 120 7901	105 109 119 7905	104 109 119 7911	103 109 119 7908	102 110 118 7931	101 110 118 7970	99 110 117 7924	97 110 117 7857
19,000 lb 8618 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 110 123 7805	109 109 122 7822	108 108 120 7835	106 106 119 7841	105 105 117 7842	104 106 117 7846	103 106 116 7840	101 106 116 7859	100 107 116 7891	99 107 115 7841	97 107 115 7770
18,000 lb 8165 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 110 123 7759	109 109 122 7774	107 107 120 7785	106 106 119 7788	105 105 117 7787	104 104 116 7788	102 103 114 7780	101 103 114 7793	100 104 114 7820	99 104 113 7765	97 104 112 7691
17,000 lb 7711 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 110 124 7721	108 108 122 7734	107 107 121 7742	106 106 119 7743	105 105 118 7739	104 104 116 7738	102 102 114 7727	101 101 113 7736	100 101 112 7757	98 101 111 7698	97 101 110 7619

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Table 42

Flaps 15° **Field Pressure Altitude (11,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb **12,701 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 133 139 8527	111 133 139 8880	112 133 138 9274	113 133 138 9694							
27,000 lb **12,247 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	109 130 137 8317	107 130 136 8352	108 130 136 8616	109 130 136 9002	110 130 135 9396						
26,000 lb **11,793 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	109 127 134 8298	107 127 134 8331	106 127 134 8364	105 127 133 8398	106 127 133 8687	107 127 133 9069	108 127 132 9478				
25,000 lb **11,340 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	109 124 132 8248	107 124 131 8278	106 124 131 8308	105 124 131 8339	104 124 130 8358	102 124 130 8379	103 124 130 8696	104 124 129 9138			
24,000 lb **10,886 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 121 129 8188	107 121 129 8215	106 121 128 8243	105 121 128 8270	104 121 128 8286	102 121 127 8304	101 121 127 8336	100 121 127 8382	101 121 127 8810	103 121 126 9333	
23,000 lb **10,433 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 117 126 8123	107 117 126 8149	106 117 126 8173	105 117 125 8197	103 117 125 8211	102 118 125 8225	101 118 124 8254	100 118 124 8283	99 118 124 8302	100 118 123 8713	100 118 123 9008
22,000 lb **9979 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 114 125 8058	107 115 124 8081	106 115 124 8103	105 115 123 8124	103 115 123 8135	102 115 123 8147	101 115 122 8171	100 115 122 8196	98 115 121 8209	97 116 121 8208	96 116 120 8300
21,000 lb **9525 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 111 122 7995	107 112 122 8016	106 112 122 8035	105 112 121 8053	103 112 121 8061	102 112 120 8070	101 112 120 8092	100 113 120 8112	98 113 119 8120	97 113 119 8113	95 113 118 8060
20,000 lb **9072 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 108 120 7933	107 108 120 7952	106 109 119 7968	104 109 119 7983	103 109 119 7989	102 109 118 7995	101 110 118 8013	100 110 118 8028	98 110 117 8031	97 110 117 8019	95 110 116 7962
19,000 lb **8618 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 108 120 7876	107 107 119 7893	105 106 118 7907	104 106 117 7919	103 106 116 7922	102 106 116 7926	101 106 116 7941	100 107 115 7951	98 107 115 7948	97 107 115 7931	95 107 114 7869
18,000 lb **8165 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 108 121 7827	107 107 119 7841	105 105 118 7852	104 104 116 7862	103 103 115 7862	102 103 114 7863	101 103 114 7875	99 104 113 7880	98 104 113 7873	97 104 112 7851	95 105 112 7784
17,000 lb **7711 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	107 108 121 7785	106 106 120 7798	105 105 118 7806	104 104 116 7813	103 103 115 7811	102 102 113 7809	100 101 112 7818	99 100 111 7819	98 101 111 7806	96 101 110 7779	95 102 110 7707

COMPACTED SNOW
RUNWAY CONDITION

RGACTO003C

Table 43

Flaps 15° **Field Pressure Altitude (12,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS	112	113									
	V_R ~ KIAS	133	133									
	V_2 ~ KIAS	138	138									
	TOFL ~ FT	9342	9732									
27,000 lb 12,247 kg	V_1 ~ KIAS	108	109	110	111							
	V_R ~ KIAS	130	130	130	130							
	V_2 ~ KIAS	136	136	136	135							
	TOFL ~ FT	8681	9039	9436	9870							
26,000 lb 11,793 kg	V_1 ~ KIAS	107	105	105	106	107						
	V_R ~ KIAS	127	127	127	127	127						
	V_2 ~ KIAS	134	133	133	133	132						
	TOFL ~ FT	8507	8542	8733	9127	9520						
25,000 lb 11,340 kg	V_1 ~ KIAS	107	105	104	103	103	104					
	V_R ~ KIAS	124	124	124	124	124	124					
	V_2 ~ KIAS	131	131	130	130	130	130					
	TOFL ~ FT	8451	8483	8510	8538	8737	9119					
24,000 lb 10,886 kg	V_1 ~ KIAS	106	105	104	103	102	101	101	102			
	V_R ~ KIAS	121	121	121	121	121	121	121	121			
	V_2 ~ KIAS	129	128	128	128	127	127	127	126			
	TOFL ~ FT	8385	8414	8439	8464	8497	8531	8728	9181			
23,000 lb 10,433 kg	V_1 ~ KIAS	106	105	104	103	102	100	99	98	98	100	
	V_R ~ KIAS	117	117	118	118	118	118	118	118	118	118	
	V_2 ~ KIAS	126	126	125	125	125	124	124	124	123	123	
	TOFL ~ FT	8314	8341	8363	8384	8414	8445	8478	8530	8744	9307	
22,000 lb 9979 kg	V_1 ~ KIAS	106	105	104	103	101	100	99	98	97	96	98
	V_R ~ KIAS	115	115	115	115	115	115	115	115	116	116	116
	V_2 ~ KIAS	124	124	123	123	122	122	122	121	121	120	120
	TOFL ~ FT	8243	8268	8287	8305	8332	8360	8389	8435	8471	8577	9106
21,000 lb 9525 kg	V_1 ~ KIAS	106	105	104	103	101	100	99	98	97	95	94
	V_R ~ KIAS	112	112	112	112	112	113	113	113	113	113	113
	V_2 ~ KIAS	122	121	121	121	120	120	120	119	119	118	118
	TOFL ~ FT	8175	8197	8214	8229	8253	8277	8303	8343	8373	8338	8339
20,000 lb 9072 kg	V_1 ~ KIAS	106	105	104	102	101	100	99	98	97	95	93
	V_R ~ KIAS	109	109	109	109	109	110	110	110	110	110	110
	V_2 ~ KIAS	120	119	119	118	118	118	118	117	117	116	116
	TOFL ~ FT	8107	8127	8141	8153	8174	8195	8218	8252	8276	8236	8167
19,000 lb 8618 kg	V_1 ~ KIAS	106	105	104	102	101	100	99	98	97	95	93
	V_R ~ KIAS	106	106	106	106	106	107	107	107	107	107	107
	V_2 ~ KIAS	118	117	117	116	116	116	115	115	115	114	114
	TOFL ~ FT	8046	8063	8074	8084	8101	8119	8139	8167	8186	8141	8068
18,000 lb 8165 kg	V_1 ~ KIAS	106	105	103	102	101	100	99	98	97	95	93
	V_R ~ KIAS	106	105	104	103	103	103	104	104	104	105	105
	V_2 ~ KIAS	118	117	115	114	114	113	113	113	112	112	111
	TOFL ~ FT	7991	8007	8015	8021	8036	8051	8068	8090	8103	8053	7975
17,000 lb 7711 kg	V_1 ~ KIAS	106	104	103	102	101	100	99	98	96	95	93
	V_R ~ KIAS	106	104	103	102	101	100	100	101	101	102	102
	V_2 ~ KIAS	118	117	115	114	113	111	111	110	110	110	109
	TOFL ~ FT	7945	7958	7965	7968	7980	7992	8005	8022	8029	7974	7892

COMPACTED SNOW RUNWAY CONDITION

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Table 44

Flaps 15° **Field Pressure Altitude (13,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT											
27,000 lb 12,247 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT											
26,000 lb 11,793 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	105 127 133 8882	106 127 133 9246	107 127 133 9655								
25,000 lb 11,340 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	104 124 131 8730	103 124 130 8764	103 124 130 8865	104 124 130 9264	104 124 129 9662						
24,000 lb 10,886 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	104 121 128 8657	103 121 128 8688	102 121 127 8726	101 121 127 8772	100 121 127 8866	101 121 127 9244					
23,000 lb 10,433 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	104 118 125 8580	103 118 125 8609	102 118 125 8643	101 118 124 8685	100 118 124 8722	99 118 124 8754	98 118 123 8789	99 118 123 9229			
22,000 lb 9979 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	104 115 123 8503	103 115 123 8529	102 115 123 8560	101 115 122 8598	100 115 122 8632	99 115 121 8661	97 115 121 8678	96 115 121 8707	96 115 120 8954	98 116 120 9489	
21,000 lb 9525 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	104 112 121 8428	103 112 121 8452	102 112 120 8480	101 113 120 8514	100 113 120 8545	98 113 119 8570	97 113 119 8584	96 113 119 8608	95 113 118 8628	94 113 118 8691	95 113 117 9238
20,000 lb 9072 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	104 109 119 8354	103 109 119 8375	102 109 118 8400	101 110 118 8431	99 110 118 8458	98 110 117 8481	97 110 117 8491	96 110 117 8509	95 110 116 8523	93 110 116 8502	91 110 116 8444
19,000 lb 8618 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	104 106 117 8287	103 106 116 8306	102 106 116 8328	100 107 116 8355	99 107 115 8379	98 107 115 8398	97 107 115 8405	96 107 114 8418	95 107 114 8426	93 107 114 8399	91 107 113 8336
18,000 lb 8165 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	104 104 116 8228	103 103 114 8244	101 103 114 8263	100 103 114 8286	99 104 113 8307	98 104 113 8323	97 104 112 8327	96 104 112 8334	94 105 112 8337	93 105 111 8304	91 105 111 8236
17,000 lb 7711 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	104 104 116 8177	102 102 114 8191	101 101 113 8207	100 101 112 8227	99 100 111 8245	98 101 111 8257	97 101 110 8258	96 101 110 8260	94 102 109 8257	93 102 109 8219	91 102 108 8145

COMPACTED SNOW RUNWAY CONDITION

RGACTO003C

Table 45

Flaps 15° **Field Pressure Altitude (14,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb **12,701 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT											
27,000 lb **12,247 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT											
26,000 lb **11,793 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT											
25,000 lb **11,340 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	103 124 130 9045	103 124 130 9395	104 124 129 9808								
24,000 lb **10,886 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	102 121 128 8965	101 121 127 9004	100 121 127 9052	101 121 127 9411	102 121 126 9803						
23,000 lb **10,433 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	102 118 125 8880	101 118 124 8916	100 118 124 8961	99 118 124 9008	98 118 123 9034	98 118 123 9309	99 118 123 9725				
22,000 lb **9979 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	102 115 123 8795	101 115 122 8828	100 115 122 8869	99 115 122 8912	98 115 121 8935	97 115 121 8963	96 115 121 9005	97 115 120 9426			
21,000 lb **9525 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	102 113 120 8714	101 113 120 8744	100 113 120 8781	99 113 119 8821	98 113 119 8840	97 113 119 8864	96 113 119 8902	94 113 118 8962	94 113 118 9100	95 113 117 9645	
20,000 lb **9072 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	102 109 118 8633	101 110 118 8661	100 110 118 8694	99 110 117 8730	98 110 117 8746	96 110 117 8766	95 110 117 8800	94 110 116 8854	93 110 116 8859	91 110 116 8820	93 110 115 9277
19,000 lb **8618 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	102 106 116 8558	101 107 116 8584	100 107 115 8614	99 107 115 8645	97 107 115 8658	96 107 115 8676	95 107 114 8705	94 107 114 8753	93 107 114 8752	91 108 113 8708	90 108 113 8638
18,000 lb **8165 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	102 103 114 8493	101 103 114 8515	100 104 113 8542	99 104 113 8570	97 104 113 8580	96 104 112 8594	95 104 112 8619	94 105 112 8660	93 105 111 8654	91 105 111 8604	89 105 110 8529
17,000 lb **7711 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	102 102 113 8436	101 101 112 8456	99 100 111 8480	98 101 111 8504	97 101 110 8511	96 101 110 8522	95 101 110 8543	94 102 109 8578	93 102 109 8565	91 102 108 8510	89 102 108 8430

COMPACTED SNOW RUNWAY CONDITION

RGACTO003C

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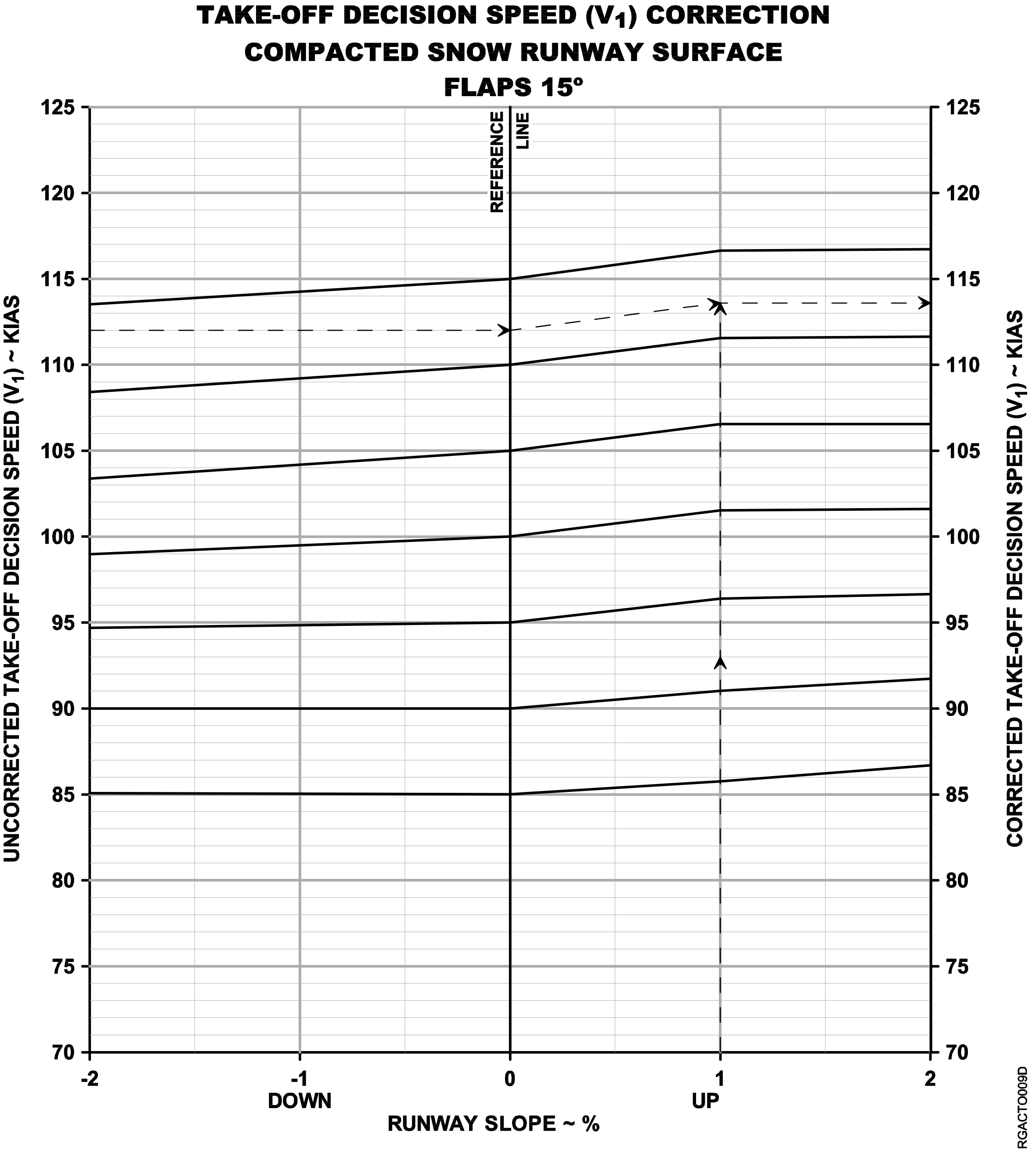
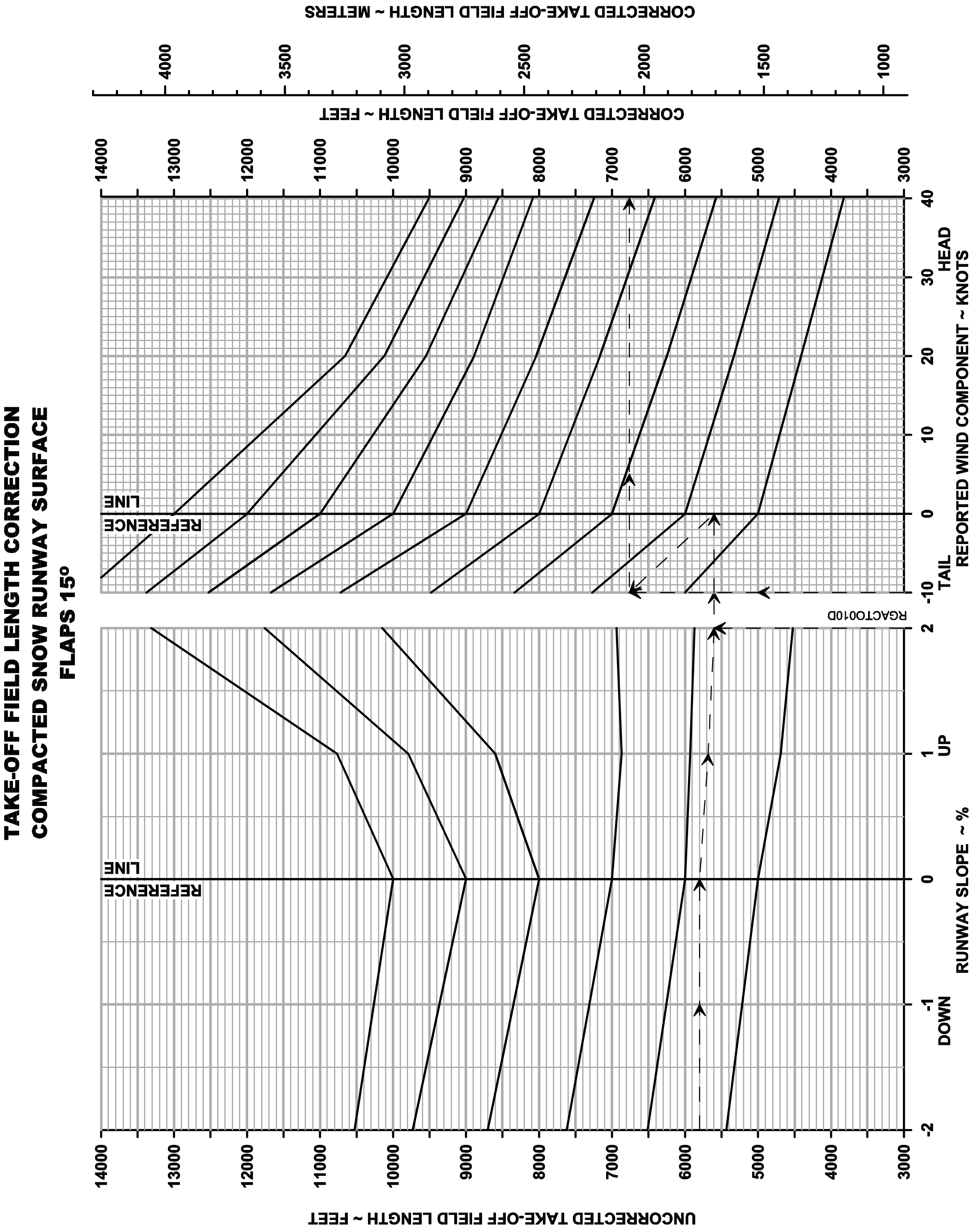


Take-Off Decision Speed (V_1) - Compacted Snow (Flaps 15°)

Corrected for Runway Gradient

Figure 6



Take-Off Field Length - Compacted Snow (Flaps 15°)

Corrected for Runway Gradient and Wind Component

Figure 7

Table 46

Flaps 15° Field Pressure Altitude (Sea Level)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	$V_1 = V_R$ ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	131	132	132	132	132		
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	140	140	139	138	138		
	TOFL (STANDING WATER) ~ FT	9907	10088	10332	10582	10819	11011	11266	11508	11771	11983	12245	12608	13077	13582	14112	14536		
	TOFL (SLUSH) ~ FT	8903	9117	9270	9491	9649	9928	10188	10350	10603	10878	11043							
	TOFL (WET SNOW) ~ FT	8552	8697	8845	8994	9146	9298	9451	9604	9760	9929	10083							
	TOFL (DRY SNOW) ~ FT	8595	8742	8892	9042	9196	9350	9504	9659	9817	9986	10142							
27,000 lb 12,247 kg	$V_1 = V_R$ ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	128	129	129	129	129		
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	137	136	136	135		
	TOFL (STANDING WATER) ~ FT	9459	9633	9859	10084	10324	10512	10756	10989	11178	11430	11665	12025	12437	12853	13398	13961		
	TOFL (SLUSH) ~ FT	8496	8697	8843	9055	9206	9425	9639	9847	10089	10331	10502							
	TOFL (WET SNOW) ~ FT	8222	8361	8503	8646	8791	8937	9083	9229	9378	9529	9674							
	TOFL (DRY SNOW) ~ FT	8269	8410	8554	8699	8846	8993	9141	9289	9439	9592	9739							
26,000 lb 11,793 kg	$V_1 = V_R$ ~ KIAS	125	125	125	125	125	125	125	125	125	125	125	125	126	126	126	126	126	
	V_2 ~ KIAS	136	136	136	135	135	135	135	135	135	135	135	135	135	134	133	133	132	
	TOFL (STANDING WATER) ~ FT	8958	9180	9408	9624	9789	10022	10244	10473	10660	10889	11129	11407	11843	12200	12644	13206	13784	
	TOFL (SLUSH) ~ FT	8097	8299	8435	8636	8843	8987	9196	9342	9554	9748	9986							
	TOFL (WET SNOW) ~ FT	7901	8035	8171	8308	8447	8586	8726	8866	9007	9151	9289							
	TOFL (DRY SNOW) ~ FT	7952	8088	8226	8365	8505	8647	8788	8930	9073	9218	9358							
25,000 lb 11,340 kg	$V_1 = V_R$ ~ KIAS	122	122	122	122	122	122	122	122	122	122	122	122	123	123	123	123	123	
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	132	132	131	130	129	
	TOFL (STANDING WATER) ~ FT	8493	8706	8924	9071	9292	9502	9661	9886	10101	10273	10501	10804	11162	11477	11916	12358	12856	
	TOFL (SLUSH) ~ FT	7669	7864	7994	8192	8360	8526	8720	8858	9060	9202	9403							
	TOFL (WET SNOW) ~ FT	7549	7677	7806	7937	8069	8201	8333	8466	8600	8735	8867							
	TOFL (DRY SNOW) ~ FT	7602	7732	7863	7995	8129	8263	8398	8532	8668	8805	8939							
24,000 lb 10,886 kg	$V_1 = V_R$ ~ KIAS	119	119	119	119	119	119	119	119	119	119	119	119	120	120	120	120	120	120
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	130	130	130	129	128	128	127	126
	TOFL (STANDING WATER) ~ FT	8052	8258	8445	8602	8816	9004	9171	9374	9535	9747	9952	10186	10561	10841	11192	11586	12092	12573
	TOFL (SLUSH) ~ FT	7151	7271	7575	7766	7891	8084	8274	8404	8593	8726	8918							
	TOFL (WET SNOW) ~ FT	7216	7338	7462	7586	7711	7837	7962	8088	8214	8342	8467							
	TOFL (DRY SNOW) ~ FT	7270	7394	7520	7646	7773	7900	8028	8156	8284	8414	8541							
23,000 lb 10,433 kg	$V_1 = V_R$ ~ KIAS	115	115	115	115	115	115	115	115	115	115	115	116	116	116	116	117	117	117
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	128	127	126	126	125	124	123
	TOFL (STANDING WATER) ~ FT	7635	7833	7961	8137	8324	8470	8676	8810	9016	9213	9364	9631	9916	10160	10503	10858	11251	11666
	TOFL (SLUSH) ~ FT	6807	6921	7040	7156	7449	7638	7758	7944	8064	8253	8372							
	TOFL (WET SNOW) ~ FT	6878	6994	7112	7229	7348	7467	7586	7704	7824	7944	8062							
	TOFL (DRY SNOW) ~ FT	6932	7051	7170	7290	7411	7531	7652	7773	7894	8016	8137							
22,000 lb 9979 kg	$V_1 = V_R$ ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	114	114	114	114	114	114
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	126	125	124	124	123	122	121
	TOFL (STANDING WATER) ~ FT	7286	7485	7678	7799	7995	8101	8296	8423	8615	8803	8944	9190	9455	9678	9933	10240	10644	11020
	TOFL (SLUSH) ~ FT	6557	6669	6783	6899	7010	7125	7414	7593	7771	7890	8067							
	TOFL (WET SNOW) ~ FT	6636	6748	6861	6974	7088	7202	7316	7430	7544	7658	7771							
	TOFL (DRY SNOW) ~ FT	6691	6806	6921	7036	7152	7268	7384	7499	7615	7732	7847							
21,000 lb 9525 kg	$V_1 = V_R$ ~ KIAS	113	113	113	113	113	112	112	112	112	113	113	113	111	111	111	112	112	112
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	126	124	122	121	120	120	119
	TOFL (STANDING WATER) ~ FT	7190	7333	7503	7691	7884	7987	8181	8306	8500	8627	8823	8980	9026	9187	9419	9595	10008	10322
	TOFL (SLUSH) ~ FT	6482	6595	6705	6819	6929	7101	7378	7501	7679	7792	7966							
	TOFL (WET SNOW) ~ FT	6555	6676	6788	6899	7011	7124	7236	7347	7459	7572	7683							
	TOFL (DRY SNOW) ~ FT	6623	6737	6850	6964	7078	7193	7307	7421	7535	7649	7763							
20,000 lb 9072 kg	$V_1 = V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	108	109	109	109
	V_2 ~ KIAS	126	127	127	127	127	127	126	126	126	126	126	126	124	120	119	118	118	117
	TOFL (STANDING WATER) ~ FT	7119	7313	7445	7617	7807	7911	8102	8223	8417	8542	8735	8887	8895	8681	8880	9119	9392	9676
	TOFL (SLUSH) ~ FT	6436	6549	6659	6769	6881	7146	7330	7452	7615	7755	7900							
	TOFL (WET SNOW) ~ FT	6523	6633	6744	6854	6965	7076	7187	7297	7408	7519	7629							
	TOFL (DRY SNOW) ~ FT	6584	6697	6809	6922	7036	7149	7262	7374	7487	7600	7713							
19,000 lb 8618 kg	$V_1 = V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	106	106	106	106
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	126	126	124	120	117	116	115	114
	TOFL (STANDING WATER) ~ FT	7066	7244	7416	7545	7732	7836	8025	8144	8335	8458	8649	8796	8790	8544	8328	8535	8769	9006
	TOFL (SLUSH) ~ FT	6397	6505	6614	6723	6885	7159	7273	7440	7553	7722	7834							
	TOFL (WET SNOW) ~ FT	6484	6594	6703	6813	6923	7033	7142	7251	7360	7470	7579							
	TOFL (DRY SNOW) ~ FT	6548	6661	6773	6885	6997	7109	7221	7332	7444	7555	7667							
18,000 lb 8165 kg	$V_1 = V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	103	103	103
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	126	124	121	117	114	113	112
	TOFL (STANDING WATER) ~ FT	7001	7177	7351	7474	7659	7763	7949	8066	8254	8373	8564	8703	8695	8404	8170	8074	8248	8452
	TOFL (SLUSH) ~ FT	6358	6467	6574	6683	6931	7112	7271	7386	7548	7663	7770							
	TOFL (WET SNOW) ~ FT	6449	6558	6667	6776	6885	6993	7101	7209	7317	7425	7533							
	TOFL (DRY SNOW) ~ FT	6517	6629	6740	6851	6962	7074	7184	7294	7404	7515	7625							
17,000 lb 7711 kg	$V_1 = V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	110	108	105	102	101	101
	V_2 ~ KIAS	128	128	128	128	128	128	127	127	127	127	127	127	124	121	117	113	111	110
	TOFL (STANDING WATER) ~ FT	6938	7124	7287	7417	7587	7703	7874	8003	8176	8293	8481	8614	8600	8318	8077	7881	7808	7986
	TOFL (SLUSH) ~ FT	6325	6430	6539	6729	6954	7063	7226	7332	7495	7604	7767							
	TOFL (WET SNOW) ~ FT	6419	6527	6635	6743	6850	6958	7065	7172	7278	7384	7491							
	TOFL (DRY SNOW) ~ FT	6490	6601	6712	6822	6932	7043	7152	7262	7371	7479	7589							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACT0004C

Table 47

Flaps 15° Field Pressure Altitude (1000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	$V_1=V_R$ ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	132	132	132	132			
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	140	139	138	138			
	TOFL(STANDING WATER) ~ FT	10320	10554	10801	11003	11263	11510	11776	11988	12266	12530	12865	13301	13675	14156	14780			
	TOFL(SLUSH) ~ FT	9263	9483	9641	9897	10155	10353	10609	10883	11064	11333	11655							
	TOFL(WET SNOW) ~ FT	8837	8986	9138	9293	9450	9608	9766	9933	10103	10270	10493							
	TOFL(DRY SNOW) ~ FT	8882	9033	9187	9344	9503	9662	9822	9990	10162	10331	10551							
27,000 lb 12,247 kg	$V_1=V_R$ ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	129	129	129	129			
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	137	137	136	135			
	TOFL(STANDING WATER) ~ FT	9844	10070	10254	10500	10736	10989	11182	11435	11681	11953	12210	12657	13084	13611	14133			
	TOFL(SLUSH) ~ FT	8833	9045	9196	9416	9572	9849	10094	10335	10517	10776	11096							
	TOFL(WET SNOW) ~ FT	8492	8636	8782	8930	9081	9232	9383	9534	9689	9852	10061							
	TOFL(DRY SNOW) ~ FT	8542	8687	8835	8986	9138	9291	9444	9596	9753	9919	10128							
26,000 lb 11,793 kg	$V_1=V_R$ ~ KIAS	125	125	125	125	125	125	125	125	125	125	125	126	126	126	126	126		
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	134	134	133	132		
	TOFL(STANDING WATER) ~ FT	9377	9549	9773	10012	10239	10421	10663	10893	11144	11342	11628	12059	12429	12858	13383	13938		
	TOFL(SLUSH) ~ FT	8423	8622	8766	8979	9193	9343	9558	9753	9999	10261	10470							
	TOFL(WET SNOW) ~ FT	8158	8296	8436	8578	8722	8867	9011	9155	9302	9458	9656							
	TOFL(DRY SNOW) ~ FT	8212	8352	8494	8638	8784	8930	9076	9222	9372	9529	9728							
25,000 lb 11,340 kg	$V_1=V_R$ ~ KIAS	122	122	122	122	122	122	122	122	122	122	122	122	123	123	123	123	123	
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	132	131	130	130	129	
	TOFL(STANDING WATER) ~ FT	8833	9052	9278	9491	9655	9885	10104	10327	10517	10738	11035	11355	11701	12128	12537	13026	13673	
	TOFL(SLUSH) ~ FT	7980	8176	8313	8517	8712	8858	9063	9206	9415	9578	9881							
	TOFL(WET SNOW) ~ FT	7792	7924	8057	8192	8329	8466	8603	8739	8879	9018	9210							
	TOFL(DRY SNOW) ~ FT	7847	7981	8117	8254	8393	8532	8671	8809	8950	9091	9286							
24,000 lb 10,886 kg	$V_1=V_R$ ~ KIAS	119	119	119	119	119	119	119	119	119	119	119	119	120	120	120	120	120	
	V_2 ~ KIAS	131	131	131	131	131	130	130	130	130	130	130	130	129	129	128	127	126	
	TOFL(STANDING WATER) ~ FT	8376	8586	8787	8947	9165	9373	9537	9751	9964	10132	10407	10768	11061	11386	11767	12263	12767	
	TOFL(SLUSH) ~ FT	7555	7743	7879	8075	8222	8404	8595	8730	8930	9067	9314							
	TOFL(WET SNOW) ~ FT	7445	7571	7699	7827	7957	8087	8217	8346	8478	8610	8787							
	TOFL(DRY SNOW) ~ FT	7502	7630	7760	7891	8023	8155	8287	8418	8552	8685	8864							
23,000 lb 10,433 kg	$V_1=V_R$ ~ KIAS	115	115	115	115	115	115	115	115	115	115	116	116	116	116	117	117	117	117
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	127	127	126	125	124	123	122
	TOFL(STANDING WATER) ~ FT	7940	8120	8254	8459	8669	8808	9018	9217	9375	9598	9839	10115	10376	10661	11041	11421	11862	12350
	TOFL(SLUSH) ~ FT	7024	7142	7419	7625	7753	7943	8066	8257	8382	8578	8747							
	TOFL(WET SNOW) ~ FT	7094	7214	7335	7457	7580	7703	7825	7948	8072	8203	8370							
	TOFL(DRY SNOW) ~ FT	7151	7274	7397	7521	7646	7771	7896	8020	8146	8279	8448							
22,000 lb 9979 kg	$V_1=V_R$ ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	114	114	114	114	114	114	114
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	125	125	124	123	122	121	120
	TOFL(STANDING WATER) ~ FT	7585	7782	7980	8087	8289	8421	8623	8807	8956	9163	9388	9639	9882	10140	10424	10821	11220	11628
	TOFL(SLUSH) ~ FT	6765	6883	6997	7115	7407	7591	7773	7894	8076	8199	8415							
	TOFL(WET SNOW) ~ FT	6842	6958	7074	7192	7310	7427	7545	7662	7780	7899	8049							
	TOFL(DRY SNOW) ~ FT	6901	7019	7138	7257	7377	7497	7617	7736	7856	7977	8128							
21,000 lb 9525 kg	$V_1=V_R$ ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	111	111	111	112	112	112
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	124	123	122	121	120	119	118
	TOFL(STANDING WATER) ~ FT	7484	7673	7799	7993	8174	8300	8501	8631	8832	9023	9189	9259	9378	9623	9878	10170	10522	10891
	TOFL(SLUSH) ~ FT	6686	6802	6915	7031	7318	7498	7677	7795	7974	8094	8296							
	TOFL(WET SNOW) ~ FT	6768	6882	6997	7113	7229	7345	7460	7576	7692	7808	7946							
	TOFL(DRY SNOW) ~ FT	6829	6946	7063	7181	7299	7418	7535	7653	7771	7890	8028							
20,000 lb 9072 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	108	109	109	109	109
	V_2 ~ KIAS	126	126	127	126	126	126	126	126	126	126	126	124	121	120	119	118	117	116
	TOFL(STANDING WATER) ~ FT	7407	7599	7781	7915	8094	8219	8417	8546	8744	8932	9094	9134	8986	9080	9301	9568	9875	10200
	TOFL(SLUSH) ~ FT	6637	6752	6863	7124	7323	7437	7615	7781	7908	8029	8220							
	TOFL(WET SNOW) ~ FT	6722	6836	6950	7065	7180	7294	7409	7523	7637	7752	7885							
	TOFL(DRY SNOW) ~ FT	6787	6904	7020	7137	7254	7371	7488	7604	7721	7838	7973							
19,000 lb 8618 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	106	106	106	106
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	126	126	124	121	118	116	116	115	114
	TOFL(STANDING WATER) ~ FT	7349	7525	7705	7838	8016	8139	8335	8462	8657	8786	9001	9035	8864	8663	8717	8946	9210	9488
	TOFL(SLUSH) ~ FT	6593	6705	6818	7088	7266	7437	7554	7725	7842	8015	8150							
	TOFL(WET SNOW) ~ FT	6681	6794	6907	7021	7134	7248	7361	7473	7586	7700	7830							
	TOFL(DRY SNOW) ~ FT	6749	6865	6980	7097	7213	7328	7444	7559	7675	7791	7922							
18,000 lb 8165 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	103	103	103	103
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	125	122	118	115	113	113	112
	TOFL(STANDING WATER) ~ FT	7280	7464	7630	7762	7940	8061	8254	8377	8572	8764	8909	8937	8758	8480	8277	8432	8656	8891
	TOFL(SLUSH) ~ FT	6550	6664	6902	7100	7228	7382	7545	7666	7778	7949	8080							
	TOFL(WET SNOW) ~ FT	6643	6756	6868	6981	7093	7205	7317	7429	7540	7652	7778							
	TOFL(DRY SNOW) ~ FT	6715	6830	6945	7060	7175	7290	7404	7519	7633	7747	7876							
17,000 lb 7711 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	101	101	101
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	125	122	118	115	112	110	109
	TOFL(STANDING WATER) ~ FT	7212	7384	7517	7689	7865	7985	8175	8312	8488	8627	8819	8841	8661	8377	8147	8006	8168	8370
	TOFL(SLUSH) ~ FT	6513	6675	6930	7051	7215	7328	7495	7607	7773	7887	8012							
	TOFL(WET SNOW) ~ FT	6610	6722	6833	6946	7056	7167	7278	7388	7498	7609	7732							
	TOFL(DRY SNOW) ~ FT	6686	6800	6914	7029	7143	7257	7370	7483	7596	7709	7835							

STANDING WATER,
SLUSH, WET SNOW,
AND DRY SNOW
RUNWAY
CONDITIONS

RGACT0004C

Table 48

Flaps 15°   Field Pressure Altitude (2000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	131	131	131	131	131	131	131	131	131	131	132	132	132	132				
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	139	139	138				
	TOFL(STANDING WATER) ~ FT	10746	10991	11256	11507	11787	12000	12281	12545	12838	13150	13466	13931	14402	15006				
	TOFL(SLUSH) ~ FT	9646	9891	10151	10353	10622	10895	11076	11348	11626	11836	12252							
	TOFL(WET SNOW) ~ FT	9143	9287	9446	9608	9779	9946	10115	10285	10465	10664	11041							
	TOFL(DRY SNOW) ~ FT	9190	9337	9498	9661	9834	10003	10174	10345	10524	10721	11092							
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	128	128	128	128	128	128	128	128	128	128	129	129	129	129	129			
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	137	137	136	136	135			
	TOFL(STANDING WATER) ~ FT	10242	10489	10728	10986	11184	11444	11693	11968	12246	12484	12932	13332	13951	14184	14815			
	TOFL(SLUSH) ~ FT	9191	9408	9568	9825	10095	10344	10529	10790	11070	11269	11725							
	TOFL(WET SNOW) ~ FT	8776	8923	9076	9231	9387	9543	9700	9867	10036	10222	10574							
	TOFL(DRY SNOW) ~ FT	8829	8978	9133	9289	9447	9605	9765	9933	10104	10291	10637							
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	125	125	125	125	125	125	125	125	125	125	126	126	126	126	126			
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	134	133	133			
	TOFL(STANDING WATER) ~ FT	9761	9985	10230	10417	10664	10900	11155	11356	11624	11892	12327	12672	13095	13604	14120			
	TOFL(SLUSH) ~ FT	8759	8968	9120	9341	9551	9760	10010	10275	10446	10721	11132							
	TOFL(WET SNOW) ~ FT	8428	8570	8716	8864	9014	9163	9313	9471	9632	9810	10132							
	TOFL(DRY SNOW) ~ FT	8485	8628	8777	8927	9079	9230	9382	9542	9705	9885	10204							
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	122	122	122	122	122	122	122	122	122	122	123	123	123	123	123	123		
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	131	131	130	129		
	TOFL(STANDING WATER) ~ FT	9250	9419	9654	9880	10104	10284	10527	10752	11014	11226	11611	11938	12360	12754	13231	13845		
	TOFL(SLUSH) ~ FT	8304	8505	8644	8855	9062	9212	9425	9591	9875	10133	10460							
	TOFL(WET SNOW) ~ FT	8047	8182	8322	8463	8604	8746	8888	9031	9189	9358	9653							
	TOFL(DRY SNOW) ~ FT	8106	8243	8385	8528	8672	8815	8960	9105	9265	9436	9729							
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	119	119	119	119	119	119	119	119	119	119	120	120	120	120	120	120	
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	129	128	127	127	126	
	TOFL(STANDING WATER) ~ FT	8714	8930	9155	9357	9536	9756	9973	10194	10397	10634	11019	11293	11614	11982	12449	12936	13498	
	TOFL(SLUSH) ~ FT	7868	8064	8198	8400	8592	8735	8939	9079	9300	9479	9868							
	TOFL(WET SNOW) ~ FT	7687	7816	7949	8083	8217	8352	8487	8622	8773	8928	9207							
	TOFL(DRY SNOW) ~ FT	7747	7879	8014	8150	8287	8423	8560	8698	8851	9008	9286							
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	115	115	115	115	115	115	115	115	116	116	116	116	116	117	117	117	117	
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	127	126	125	125	124	123	
	TOFL(STANDING WATER) ~ FT	8235	8445	8644	8802	9017	9221	9383	9610	9822	10012	10343	10604	10886	11254	11609	12037	12548	
	TOFL(SLUSH) ~ FT	7262	7551	7745	7938	8086	8261	8390	8590	8790	8953	9208							
	TOFL(WET SNOW) ~ FT	7321	7445	7571	7698	7825	7952	8080	8214	8352	8505	8753							
	TOFL(DRY SNOW) ~ FT	7382	7508	7637	7766	7895	8024	8154	8291	8431	8586	8833							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	114	114	114	114	114	114	115	115
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	125	124	123	122	122	121	120
	TOFL(STANDING WATER) ~ FT	7893	8072	8278	8414	8620	8817	8964	9174	9366	9554	9868	10105	10361	10636	11013	11398	11837	12310
	TOFL(SLUSH) ~ FT	6983	7100	7396	7586	7772	7897	8083	8209	8398	8545	8846							
	TOFL(WET SNOW) ~ FT	7059	7179	7300	7422	7544	7665	7787	7910	8033	8179	8409							
	TOFL(DRY SNOW) ~ FT	7121	7243	7367	7491	7615	7739	7863	7988	8113	8261	8491							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	111	111	111	112	112	112	112
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125	123	122	121	120	119	119	118
	TOFL(STANDING WATER) ~ FT	7783	7978	8091	8292	8498	8633	8838	9034	9187	9411	9556	9597	9818	10076	10353	10703	11093	11570
	TOFL(SLUSH) ~ FT	6900	7018	7306	7492	7675	7798	7981	8105	8290	8428	8553							
	TOFL(WET SNOW) ~ FT	6981	7099	7219	7338	7458	7578	7698	7818	7939	8073	8196							
	TOFL(DRY SNOW) ~ FT	7046	7166	7289	7411	7533	7655	7778	7900	8024	8160	8281							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	110	108	109	109	109	109	109
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125	122	120	119	118	117	117	116
	TOFL(STANDING WATER) ~ FT	7701	7899	8082	8211	8414	8547	8750	8943	9091	9314	9420	9280	9278	9508	9756	10045	10386	10765
	TOFL(SLUSH) ~ FT	6847	7031	7312	7430	7613	7751	7914	8064	8219	8351	8447							
	TOFL(WET SNOW) ~ FT	6932	7050	7169	7287	7406	7524	7643	7762	7881	8013	8106							
	TOFL(DRY SNOW) ~ FT	7001	7121	7242	7364	7485	7606	7727	7848	7970	8104	8195							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	106	106	106	106	106
	V_2 ~ KIAS	127	127	127	127	127	127	126	126	126	126	125	122	119	117	116	115	114	114
	TOFL(STANDING WATER) ~ FT	7626	7821	8003	8131	8331	8463	8663	8844	8999	9218	9317	9153	8984	8914	9133	9393	9690	10006
	TOFL(SLUSH) ~ FT	6800	7070	7254	7429	7551	7727	7847	8025	8147	8338	8378							
	TOFL(WET SNOW) ~ FT	6888	7005	7122	7240	7357	7474	7592	7709	7827	7956	8042							
	TOFL(DRY SNOW) ~ FT	6960	7080	7200	7320	7440	7550	7680	7800	7920	8052	8137							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	103	103	104	104
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	125	122	119	116	114	113	112	111
	TOFL(STANDING WATER) ~ FT	7564	7744	7922	8052	8249	8377	8577	8778	8908	9123	9215	9051	8863	8640	8616	8841	9094	9362
	TOFL(SLUSH) ~ FT	6809	7082	7200	7374	7519	7668	7784	7958	8078	8265	8348							
	TOFL(WET SNOW) ~ FT	6848	6964	7080	7197	7313	7429	7545	7661	7777	7903	7983							
	TOFL(DRY SNOW) ~ FT	6923	7042	7162	7281	7400	7519	7638	7755	7875	8004	8083							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	111	109	107	104	101	101	101	101
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	126	123	119	116	113	111	110	109
	TOFL(STANDING WATER) ~ FT	7492	7669	7840	7975	8170	8295	8492	8636	8819	9029	9115	8951	8754	8465	8257	8321	8523	8748
	TOFL(SLUSH) ~ FT	6852	7033	7202	7319	7490	7607	7778	7896	8068	8194	8272							
	TOFL(WET SNOW) ~ FT	6811	6927	7043	7158	7273	7388	7503	7617	7732	7856	7929							
	TOFL(DRY SNOW) ~ FT	6891	7010	7129	7247	7365	7483	7600	7718	7835	7962	8034							

STANDING WATER,
SLUSH, WET SNOW,
AND DRY SNOW
RUNWAY
CONDITIONS

RGACTO004C

Table 49

Flaps 15° Field Pressure Altitude (3000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	131	131	131	131	131	131	131	131	131	132	132	132	132	132				
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	139	139	138	138				
	TOFL(STANDING WATER) ~ FT	11238	11510	11777	12005	12288	12562	12854	13153	13364	13767	14223	14672	15257	15831				
	TOFL(SLUSH) ~ FT	10115	10359	10625	10902	11087	11365	11641	11773	12075	12535	12922							
	TOFL(WET SNOW) ~ FT	9449	9614	9782	9953	10126	10302	10480	10666	10862	11222	11596							
	TOFL(DRY SNOW) ~ FT	9500	9667	9837	10009	10184	10362	10539	10722	10920	11273	11638							
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	128	128	128	128	128	128	128	128	128	129	129	129	129	129				
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	137	137	136	136	135				
	TOFL(STANDING WATER) ~ FT	10710	10911	11177	11442	11706	11984	12263	12487	12771	13223	13500	13959	14433	15039				
	TOFL(SLUSH) ~ FT	9554	9816	10074	10336	10543	10806	11084	11271	11561	11911	12288							
	TOFL(WET SNOW) ~ FT	9063	9222	9383	9543	9714	9882	10050	10223	10413	10751	11091							
	TOFL(DRY SNOW) ~ FT	9118	9280	9442	9605	9778	9948	10118	10293	10482	10811	11146							
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	125	125	125	125	125	125	125	125	125	126	126	126	126	126	126			
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	134	133	133	132			
	TOFL(STANDING WATER) ~ FT	10150	10401	10656	10898	11166	11371	11638	11895	12185	12605	12947	13335	13845	14176	14808			
	TOFL(SLUSH) ~ FT	9105	9328	9503	9760	10023	10289	10460	10723	11008	11334	11731							
	TOFL(WET SNOW) ~ FT	8702	8854	9009	9162	9325	9486	9646	9811	9990	10298	10608							
	TOFL(DRY SNOW) ~ FT	8762	8917	9073	9229	9394	9557	9719	9886	10067	10373	10677							
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	122	122	122	122	122	122	122	122	122	123	123	123	123	123	123			
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	132	131	131	130	129			
	TOFL(STANDING WATER) ~ FT	9632	9850	10095	10280	10526	10771	11027	11279	11504	11880	12203	12594	12991	13449	14028			
	TOFL(SLUSH) ~ FT	8628	8841	8992	9211	9428	9610	9888	10150	10330	10715	11017							
	TOFL(WET SNOW) ~ FT	8306	8452	8598	8744	8891	9050	9202	9359	9528	9812	10089							
	TOFL(DRY SNOW) ~ FT	8368	8516	8665	8813	8963	9123	9278	9437	9608	9891	10164							
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	119	119	119	119	119	119	119	119	119	120	120	120	120	120	120		
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	129	128	128	127	126		
	TOFL(STANDING WATER) ~ FT	9120	9341	9527	9752	9974	10215	10409	10635	10899	11216	11548	11842	12214	12665	13122	13662		
	TOFL(SLUSH) ~ FT	8181	8385	8524	8733	8938	9097	9312	9479	9765	10127	10406							
	TOFL(WET SNOW) ~ FT	7933	8071	8210	8349	8489	8640	8785	8928	9089	9359	9607							
	TOFL(DRY SNOW) ~ FT	7996	8137	8279	8420	8562	8715	8863	9009	9171	9441	9685							
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	115	115	115	115	115	116	116	116	116	116	116	116	117	117	117	117	117	
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	127	126	126	125	124	123	122	
	TOFL(STANDING WATER) ~ FT	8566	8784	9007	9214	9390	9621	9834	10013	10266	10591	10846	11108	11482	11823	12223	12703	13320	
	TOFL(SLUSH) ~ FT	7728	7923	8058	8258	8397	8601	8805	8954	9176	9427	9671							
	TOFL(WET SNOW) ~ FT	7554	7685	7817	7949	8088	8226	8364	8505	8658	8899	9118							
	TOFL(DRY SNOW) ~ FT	7618	7752	7887	8021	8162	8302	8442	8586	8741	8982	9199							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	113	113	113	113	113	113	113	113	113	114	114	114	114	114	114	114	115	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125	124	124	123	122	121	120	
	TOFL(STANDING WATER) ~ FT	8186	8396	8610	8808	8970	9186	9376	9558	9776	10108	10329	10577	10860	11227	11586	12007	12484	
	TOFL(SLUSH) ~ FT	7372	7573	7703	7893	8084	8215	8406	8546	8759	8992	9200							
	TOFL(WET SNOW) ~ FT	7282	7409	7535	7661	7788	7915	8041	8179	8325	8550	8751							
	TOFL(DRY SNOW) ~ FT	7348	7477	7606	7734	7864	7993	8121	8262	8410	8635	8834							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	113	113	113	113	113	113	113	113	113	112	111	111	111	112	112	112	112	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	123	122	121	121	120	119	118	
	TOFL(STANDING WATER) ~ FT	8076	8277	8487	8627	8838	9038	9194	9410	9619	9776	9822	10033	10282	10573	10893	11324	11760	
	TOFL(SLUSH) ~ FT	7285	7479	7661	7794	7981	8109	8297	8427	8624	8763	8743							
	TOFL(WET SNOW) ~ FT	7200	7325	7450	7574	7698	7823	7947	8072	8207	8340	8377							
	TOFL(DRY SNOW) ~ FT	7269	7396	7524	7650	7778	7905	8031	8159	8296	8428	8462							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	108	109	109	109	109	109	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	122	120	119	118	118	117	116	
	TOFL(STANDING WATER) ~ FT	7989	8195	8403	8541	8749	8946	9098	9313	9507	9636	9532	9441	9719	9955	10235	10563	10956	
	TOFL(SLUSH) ~ FT	7230	7416	7603	7727	7914	8043	8226	8350	8544	8654	8537							
	TOFL(WET SNOW) ~ FT	7149	7273	7397	7520	7643	7766	7888	8012	8144	8248	8187							
	TOFL(DRY SNOW) ~ FT	7222	7348	7475	7600	7726	7852	7977	8103	8238	8341	8275							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	108	106	106	106	106	106	
	V_2 ~ KIAS	127	127	127	126	126	126	126	126	126	125	122	120	117	116	115	115	114	
	TOFL(STANDING WATER) ~ FT	7910	8114	8319	8453	8661	8799	9006	9218	9363	9474	9405	9238	9127	9339	9583	9868	10183	
	TOFL(SLUSH) ~ FT	7235	7390	7540	7721	7847	8029	8153	8337	8470	8573	8442							
	TOFL(WET SNOW) ~ FT	7102	7225	7347	7469	7591	7713	7833	7955	8086	8183	8108							
	TOFL(DRY SNOW) ~ FT	7179	7304	7429	7554	7679	7803	7927	8051	8185	8281	8202							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	107	105	103	103	103	104	
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	125	123	120	117	114	113	112	112	
	TOFL(STANDING WATER) ~ FT	7849	8035	8237	8370	8575	8711	8915	9123	9263	9371	9301	9125	8946	8820	9031	9275	9556	
	TOFL(SLUSH) ~ FT	7180	7356	7480	7659	7782	7961	8084	8264	8395	8492	8399							
	TOFL(WET SNOW) ~ FT	7060	7181	7303	7423	7543	7664	7783	7903	8032	8123	8045							
	TOFL(DRY SNOW) ~ FT	7140	7264	7389	7512	7636	7759	7881	8004	8136	8226	8144							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	111	109	107	105	102	101	101	101	
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	126	123	120	117	114	111	110	109	
	TOFL(STANDING WATER) ~ FT	7771	7957	8157	8288	8490	8638	8825	9030	9168	9267	9197	9022	8826	8547	8497	8705	8940	
	TOFL(SLUSH) ~ FT	7174	7303	7478	7601	7776	7899	8074	8194	8322	8414	8341							
	TOFL(WET SNOW) ~ FT	7021	7142	7262	7381	7501	7620	7738	7856	7983	8067	7987							
	TOFL(DRY SNOW) ~ FT	7106	7230	7353	7476	7598	7720	7841	7963	8092	8176	8092							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACT0004C

Table 50

Flaps 15° Field Pressure Altitude (4000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	131	131	131	131	131	131	131	132	132	132	132	132	132					
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	139	139	138	138					
	TOFL(STANDING WATER) ~ FT	11714	12007	12299	12579	12880	13173	13367	13684	14068	14546	14990	15528	16091					
	TOFL(SLUSH) ~ FT	10616	10910	11100	11383	11668	11793	12078	12384	12748	13227	13645							
	TOFL(WET SNOW) ~ FT	9777	9961	10139	10321	10507	10686	10865	11070	11420	11937	12413							
	TOFL(DRY SNOW) ~ FT	9831	10017	10196	10380	10565	10742	10923	11127	11471	11835	12231							
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	128	128	128	128	128	128	128	129	129	129	129	129	129					
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	137	137	137	136	135					
	TOFL(STANDING WATER) ~ FT	11167	11435	11715	11999	12282	12505	12793	13086	13431	13811	14264	14772	15304					
	TOFL(SLUSH) ~ FT	10070	10287	10554	10823	11109	11289	11564	11859	12141	12565	12966							
	TOFL(WET SNOW) ~ FT	9380	9556	9726	9899	10075	10242	10416	10614	10939	11282	11653							
	TOFL(DRY SNOW) ~ FT	9439	9616	9789	9954	10142	10311	10485	10679	11002	11336	11697							
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	125	125	125	125	125	125	125	125	126	126	126	126	126	126				
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	134	134	133	132				
	TOFL(STANDING WATER) ~ FT	10632	10904	11166	11384	11660	11912	12188	12486	12842	13249	13634	13972	14441	15045				
	TOFL(SLUSH) ~ FT	9483	9753	10032	10288	10483	10740	11010	11208	11616	11944	12314							
	TOFL(WET SNOW) ~ FT	9003	9172	9335	9501	9659	9828	9992	10176	10481	10795	11130							
	TOFL(DRY SNOW) ~ FT	9067	9238	9403	9571	9741	9903	10069	10255	10556	10862	11188							
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	122	122	122	122	122	122	122	122	123	123	123	123	123	123	123			
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	132	132	131	130	130	129			
	TOFL(STANDING WATER) ~ FT	10022	10283	10538	10784	11048	11295	11507	11772	12165	12493	12883	13245	13767	14257	14639			
	TOFL(SLUSH) ~ FT	8983	9213	9433	9624	9909	10166	10332	10603	10993	11291	11604							
	TOFL(WET SNOW) ~ FT	8589	8750	8906	9064	9223	9375	9530	9704	9984	10264	10561							
	TOFL(DRY SNOW) ~ FT	8655	8818	8976	9137	9298	9452	9610	9786	10065	10342	10634							
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	119	119	119	119	119	119	119	119	120	120	120	120	120	120			
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	129	129	128	127	126			
	TOFL(STANDING WATER) ~ FT	9505	9737	9985	10169	10421	10650	10901	11179	11488	11826	12119	12516	12915	13350	13929			
	TOFL(SLUSH) ~ FT	8513	8737	8916	9105	9326	9493	9766	10043	10318	10666	10949							
	TOFL(WET SNOW) ~ FT	8194	8353	8502	8647	8798	8943	9090	9261	9523	9774	10040							
	TOFL(DRY SNOW) ~ FT	8262	8423	8574	8722	8876	9022	9173	9346	9607	9855	10118							
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	115	116	116	116	116	116	116	116	116	116	116	116	117	117	117	117		
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	127	126	126	125	124	124	123		
	TOFL(STANDING WATER) ~ FT	8973	9158	9391	9631	9851	10027	10268	10508	10852	11097	11375	11723	12066	12450	12971	13493		
	TOFL(SLUSH) ~ FT	8042	8258	8404	8612	8819	8957	9177	9357	9698	9956	10203							
	TOFL(WET SNOW) ~ FT	7801	7952	8094	8237	8381	8519	8659	8816	9055	9278	9514							
	TOFL(DRY SNOW) ~ FT	7870	8023	8167	8313	8459	8600	8743	8902	9141	9362	9595							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	113	113	113	113	113	113	113	113	114	114	114	114	114	114	114	115	115	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	124	124	123	122	121	121	120	
	TOFL(STANDING WATER) ~ FT	8591	8742	8962	9172	9410	9579	9793	10035	10299	10586	10820	11097	11467	11808	12204	12690	13293	
	TOFL(SLUSH) ~ FT	7685	7885	8081	8217	8425	8558	8761	8916	9211	9427	9665							
	TOFL(WET SNOW) ~ FT	7519	7652	7785	7917	8060	8192	8327	8477	8699	8905	9119							
	TOFL(DRY SNOW) ~ FT	7589	7725	7860	7994	8139	8274	8412	8564	8787	8992	9203							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	113	113	113	113	113	113	113	113	112	111	111	111	112	112	112	112	112	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	122	122	121	120	119	118	117	
	TOFL(STANDING WATER) ~ FT	8396	8612	8832	9035	9201	9417	9618	9791	10024	10010	10283	10514	10808	11113	11526	11941	12409	
	TOFL(SLUSH) ~ FT	7587	7784	7977	8111	8304	8435	8624	8766	8917	8962	9163							
	TOFL(WET SNOW) ~ FT	7432	7564	7694	7824	7954	8079	8207	8343	8469	8527	8720							
	TOFL(DRY SNOW) ~ FT	7506	7640	7773	7905	8037	8166	8296	8435	8560	8615	8807							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	109	109	109	109	109	109	109	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	120	120	119	118	117	117	116	
	TOFL(STANDING WATER) ~ FT	8312	8525	8742	8887	9104	9320	9511	9686	9816	9780	9695	9883	10186	10453	10762	11144	11563	
	TOFL(SLUSH) ~ FT	7582	7716	7906	8038	8229	8357	8544	8684	8801	8772	8680							
	TOFL(WET SNOW) ~ FT	7379	7509	7638	7766	7894	8019	8144	8279	8391	8357	8321							
	TOFL(DRY SNOW) ~ FT	7456	7588	7720	7851	7982	8110	8238	8375	8487	8449	8409							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	106	106	106	106	107	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	120	118	117	116	115	114	113	
	TOFL(STANDING WATER) ~ FT	8292	8440	8653	8797	9010	9224	9363	9585	9709	9648	9521	9405	9563	9797	10056	10426	10795	
	TOFL(SLUSH) ~ FT	7522	7703	7841	8028	8159	8344	8470	8662	8779	8675	8534							
	TOFL(WET SNOW) ~ FT	7329	7457	7585	7712	7838	7962	8086	8218	8324	8275	8192							
	TOFL(DRY SNOW) ~ FT	7410	7541	7672	7802	7931	8058	8185	8320	8426	8373	8285							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	104	103	103	104	104	
	V_2 ~ KIAS	127	127	127	127	127	126	126	126	125	123	120	118	115	114	113	112	111	
	TOFL(STANDING WATER) ~ FT	8162	8355	8566	8708	8918	9129	9267	9485	9600	9532	9403	9238	9102	9243	9473	9745	10059	
	TOFL(SLUSH) ~ FT	7461	7647	7776	7959	8088	8270	8395	8588	8694	8590	8448							
	TOFL(WET SNOW) ~ FT	7284	7410	7537	7652	7787	7909	8032	8162	8263	8210	8125							
	TOFL(DRY SNOW) ~ FT	7369	7499	7628	7757	7885	8010	8136	8269	8369	8313	8223							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	111	110	108	105	103	101	101	101	101	
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	123	121	118	115	112	110	110	109	
	TOFL(STANDING WATER) ~ FT	8082	8272	8480	8618	8827	9035	9169	9386	9496	9377	9296	9122	8931	8776	8896	9128	9399	
	TOFL(SLUSH) ~ FT	7449	7588	7769	7893	8058	8199	8322	8538	8639	8508	8427							
	TOFL(WET SNOW) ~ FT	7242	7368	7493	7617	7741	7862	7983	8111	8206	8151	8063							
	TOFL(DRY SNOW) ~ FT	7333	7461	7589	7717	7844	7958	8093	8224	8318	8260	8167							

STANDING WATER,
SLUSH, WET SNOW,
AND DRY SNOW
RUNWAY
CONDITIONS

RGACTO004C

Table 51

Flaps 15° Field Pressure Altitude (5000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	131	132	132	132	132	132	132	132	132	132	132	132						
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	139	139	138	138						
	TOFL(STANDING WATER) ~ FT	12282	12602	12904	13225	13413	13712	14059	14399	14891	15424	15882	16479						
	TOFL(SLUSH) ~ FT	11101	11407	11692	11842	12121	12405	12718	13052	13532	13991	14520							
	TOFL(WET SNOW) ~ FT	10140	10343	10529	10734	10908	11087	11316	11767	12233	12674	13183							
	TOFL(DRY SNOW) ~ FT	10197	10402	10588	10789	10965	11144	11369	11674	12048	12463	12889							
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	128	128	128	129	129	129	129	129	129	129	129	129	129					
	V_2 ~ KIAS	138	138	138	138	138	138	138	137	137	137	136	136	135					
	TOFL(STANDING WATER) ~ FT	11715	12021	12308	12555	12839	13108	13349	13749	14144	14621	15128	15592	16265					
	TOFL(SLUSH) ~ FT	10556	10845	11132	11337	11607	11878	12049	12442	12805	13301	13715							
	TOFL(WET SNOW) ~ FT	9728	9921	10097	10288	10457	10631	10845	11135	11487	11953	12423							
	TOFL(DRY SNOW) ~ FT	9790	9985	10164	10356	10526	10697	10912	11197	11542	11922	12314							
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	125	125	125	126	126	126	126	126	126	126	126	126	126					
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	134	134	133	133					
	TOFL(STANDING WATER) ~ FT	11113	11406	11684	11959	12232	12509	12831	13133	13571	13930	14307	14810	15335					
	TOFL(SLUSH) ~ FT	10016	10310	10505	10786	11052	11227	11534	11903	12184	12615	13011							
	TOFL(WET SNOW) ~ FT	9338	9522	9691	9873	10033	10195	10401	10659	10993	11349	11707							
	TOFL(DRY SNOW) ~ FT	9406	9592	9763	9947	10110	10274	10480	10743	11060	11406	11757							
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	122	122	122	122	122	122	122	122	123	123	123	123	123	123				
	V_2 ~ KIAS	133	133	133	133	133	133	133	132	132	132	131	130	130	129				
	TOFL(STANDING WATER) ~ FT	10525	10805	11071	11347	11549	11795	12101	12461	12783	13216	13571	14044	14386	14985				
	TOFL(SLUSH) ~ FT	9379	9645	9915	10193	10372	10623	10926	11185	11577	11917	12255							
	TOFL(WET SNOW) ~ FT	8909	9084	9245	9417	9559	9723	9916	10162	10450	10772	11096							
	TOFL(DRY SNOW) ~ FT	8980	9157	9320	9494	9649	9806	10001	10246	10531	10846	11160							
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	119	119	119	119	119	119	119	119	120	120	120	120	120	120			
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	129	129	128	127	127	126			
	TOFL(STANDING WATER) ~ FT	9983	10189	10444	10699	10949	11203	11488	11749	12120	12439	12837	13186	13629	14194	14763			
	TOFL(SLUSH) ~ FT	8887	9124	9348	9541	9811	10067	10313	10583	10857	11258	11564							
	TOFL(WET SNOW) ~ FT	8501	8666	8819	8969	9134	9282	9464	9690	9952	10240	10528							
	TOFL(DRY SNOW) ~ FT	8573	8741	8897	9069	9217	9367	9552	9778	10037	10322	10605							
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	117	117	117	117	117			
	V_2 ~ KIAS	128	128	128	128	128	128	128	127	127	126	126	125	125	124	123			
	TOFL(STANDING WATER) ~ FT	9396	9636	9873	10119	10308	10532	10810	11056	11378	11681	12023	12330	12791	13226	13711			
	TOFL(SLUSH) ~ FT	8409	8632	8807	9007	9215	9378	9654	9945	10235	10505	10831							
	TOFL(WET SNOW) ~ FT	8098	8256	8402	8557	8696	8837	9009	9213	9447	9706	9960							
	TOFL(DRY SNOW) ~ FT	8172	8332	8481	8638	8780	8923	9099	9302	9535	9791	10041							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	113	113	113	113	113	113	113	114	114	114	114	114	114	114	115	115		
	V_2 ~ KIAS	126	126	126	126	126	126	126	125	125	125	124	123	122	122	121	120		
	TOFL(STANDING WATER) ~ FT	8961	9197	9433	9619	9841	10051	10328	10556	10858	11117	11388	11727	12075	12460	12984	13490		
	TOFL(SLUSH) ~ FT	8017	8241	8447	8597	8798	8938	9173	9387	9706	9978	10218							
	TOFL(WET SNOW) ~ FT	7785	7940	8081	8230	8363	8499	8664	8852	9069	9305	9535							
	TOFL(DRY SNOW) ~ FT	7859	8018	8161	8312	8449	8587	8755	8943	9159	9394	9620							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	113	113	113	113	113	113	113	111	111	111	111	111	112	112	112	112		
	V_2 ~ KIAS	126	126	126	126	126	125	125	124	123	122	122	121	120	119	119	118		
	TOFL(STANDING WATER) ~ FT	8832	8987	9215	9442	9648	9816	10062	10116	10272	10568	10797	11064	11436	11778	12174	12636		
	TOFL(SLUSH) ~ FT	7978	8119	8318	8459	8652	8788	9007	9056	9190	9411	9631							
	TOFL(WET SNOW) ~ FT	7695	7832	7967	8103	8234	8365	8516	8558	8685	8899	9107							
	TOFL(DRY SNOW) ~ FT	7774	7913	8051	8189	8323	8457	8610	8652	8777	8989	9196							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	111	110	109	109	109	109	109	109	109		
	V_2 ~ KIAS	126	126	126	126	126	126	126	124	122	120	120	119	118	117	117	116		
	TOFL(STANDING WATER) ~ FT	8743	8896	9118	9345	9547	9715	9957	9978	9914	9976	10157	10438	10712	11011	11377	11842		
	TOFL(SLUSH) ~ FT	7908	8047	8243	8382	8572	8707	8922	8953	8886	8932	9107							
	TOFL(WET SNOW) ~ FT	7640	7775	7908	8042	8172	8302	8450	8475	8464	8506	8671							
	TOFL(DRY SNOW) ~ FT	7722	7860	7997	8133	8266	8399	8550	8573	8559	8599	8761							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	106	106	106	106	106		
	V_2 ~ KIAS	126	126	126	126	126	126	126	124	122	120	118	117	116	115	114	114		
	TOFL(STANDING WATER) ~ FT	8656	8807	9026	9249	9394	9613	9853	9872	9797	9773	9698	9814	10044	10359	10567	11017		
	TOFL(SLUSH) ~ FT	7844	8010	8174	8365	8499	8692	8856	8868	8789	8781	8689							
	TOFL(WET SNOW) ~ FT	7588	7721	7854	7986	8114	8243	8388	8410	8387	8374	8338							
	TOFL(DRY SNOW) ~ FT	7675	7811	7947	8081	8214	8346	8494	8514	8488	8471	8431							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	103	103	104	104		
	V_2 ~ KIAS	127	126	126	126	126	126	126	125	122	120	118	115	114	113	112	111		
	TOFL(STANDING WATER) ~ FT	8570	8716	8935	9154	9298	9515	9751	9767	9687	9663	9520	9395	9478	9721	9982	10274		
	TOFL(SLUSH) ~ FT	7781	7971	8105	8295	8425	8613	8790	8802	8746	8697	8550							
	TOFL(WET SNOW) ~ FT	7541	7673	7803	7934	8061	8189	8331	8351	8324	8306	8216							
	TOFL(DRY SNOW) ~ FT	7633	7767	7901	8035	8166	8297	8443	8460	8430	8410	8315							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	103	102	101	101	101		
	V_2 ~ KIAS	127	127	127	127	127	127	127	125	123	121	118	115	113	111	110	109		
	TOFL(STANDING WATER) ~ FT	8486	8629	8845	9061	9201	9418	9524	9607	9583	9554	9412	9228	9099	9146	9370	9627		
	TOFL(SLUSH) ~ FT	7719	7905	8038	8225	8353	8567	8795	8737	8687	8613	8466							
	TOFL(WET SNOW) ~ FT	7499	7629	7758	7887	8014	8140	8280	8296	8266	8245	8153							
	TOFL(DRY SNOW) ~ FT	7596	7729	7862	7993	8124	8254	8397	8412	8379	8354	8258							

STANDING WATER,
SLUSH, WET SNOW,
AND DRY SNOW
RUNWAY
CONDITIONS

RGACT0004C

Table 52

Flaps 15° Field Pressure Altitude (6000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	$V_1=V_R$ ~ KIAS	131	131	132	132	132	132	132	132	132	132	132							
	V_2 ~ KIAS	140	140	140	140	140	140	139	139	139	138	138							
	TOFL(STANDING WATER) ~ FT	12809	13160	13403	13753	14087	14446	14784	15271	15817	16285	16870							
	TOFL(SLUSH) ~ FT	11599	11779	12110	12445	12742	13015	13430	13817	14363	14894	15393							
	TOFL(WET SNOW) ~ FT	10438	10671	10896	11126	11341	11773	12107	12563	12998	13516	13997							
	TOFL(DRY SNOW) ~ FT	10499	10728	10954	11182	11392	11629	11929	12294	12717	13148	13614							
27,000 lb 12,247 kg	$V_1=V_R$ ~ KIAS	128	128	129	129	129	129	129	129	129	129	129	129						
	V_2 ~ KIAS	138	138	138	138	138	137	137	137	137	136	136	135						
	TOFL(STANDING WATER) ~ FT	12212	12495	12830	13149	13377	13721	14119	14575	15000	15516	15973	16583						
	TOFL(SLUSH) ~ FT	10958	11278	11597	11917	12074	12405	12775	13151	13538	14080	14604							
	TOFL(WET SNOW) ~ FT	10013	10231	10448	10669	10868	11096	11379	11866	12348	12756	13276							
	TOFL(DRY SNOW) ~ FT	10082	10300	10517	10735	10936	11161	11441	11778	12167	12564	12986							
26,000 lb 11,793 kg	$V_1=V_R$ ~ KIAS	125	125	125	126	126	126	126	126	126	126	126	126	126					
	V_2 ~ KIAS	135	135	135	135	135	135	135	134	134	134	133	133	132					
	TOFL(STANDING WATER) ~ FT	11585	11905	12225	12549	12860	13190	13482	13822	14296	14685	15179	15653	16315					
	TOFL(SLUSH) ~ FT	10426	10732	11045	11278	11559	11876	12088	12516	12892	13342	13766							
	TOFL(WET SNOW) ~ FT	9614	9821	10025	10231	10426	10640	10895	11220	11585	11951	12484							
	TOFL(DRY SNOW) ~ FT	9687	9896	10103	10311	10505	10716	10967	11286	11643	11999	12380							
25,000 lb 11,340 kg	$V_1=V_R$ ~ KIAS	122	122	122	122	122	122	122	123	123	123	123	123	123					
	V_2 ~ KIAS	133	133	133	133	133	133	132	132	132	131	131	130	129					
	TOFL(STANDING WATER) ~ FT	10998	11300	11545	11853	12130	12442	12800	13122	13569	13821	14271	14697	15294					
	TOFL(SLUSH) ~ FT	9840	10145	10367	10660	10952	11160	11507	11807	12186	12524	12956							
	TOFL(WET SNOW) ~ FT	9174	9370	9564	9759	9941	10138	10330	10567	11002	11329	11681							
	TOFL(DRY SNOW) ~ FT	9251	9449	9645	9842	10027	10225	10466	10747	11073	11393	11734							
24,000 lb 10,886 kg	$V_1=V_R$ ~ KIAS	119	119	119	119	119	119	119	119	120	120	120	120	120	120				
	V_2 ~ KIAS	130	130	130	130	130	130	130	129	129	129	128	127	127	126				
	TOFL(STANDING WATER) ~ FT	10378	10650	10947	11241	11525	11760	12072	12444	12777	13186	13530	14010	14345	14858				
	TOFL(SLUSH) ~ FT	9275	9492	9808	10103	10347	10558	10870	11173	11553	11890	12220							
	TOFL(WET SNOW) ~ FT	8756	8942	9131	9316	9490	9677	9897	10156	10455	10749	11064							
	TOFL(DRY SNOW) ~ FT	8835	9022	9215	9402	9578	9767	9987	10244	10540	10830	11135							
23,000 lb 10,433 kg	$V_1=V_R$ ~ KIAS	116	116	116	116	116	116	116	116	117	117	117	117	117	117	117			
	V_2 ~ KIAS	128	128	128	128	128	128	127	127	126	126	125	125	124	123	123			
	TOFL(STANDING WATER) ~ FT	9814	10083	10308	10588	10840	11118	11347	11686	12004	12356	12663	13093	13520	13998	14637			
	TOFL(SLUSH) ~ FT	8721	8970	9214	9413	9681	9950	10194	10507	10810	11084	11447							
	TOFL(WET SNOW) ~ FT	8345	8521	8596	8871	9036	9207	9408	9641	9911	10172	10447							
	TOFL(DRY SNOW) ~ FT	8424	8603	8780	8958	9126	9299	9499	9731	10000	10257	10528							
22,000 lb 9979 kg	$V_1=V_R$ ~ KIAS	113	113	113	113	113	113	114	114	114	114	114	114	114	114	115	115		
	V_2 ~ KIAS	126	126	126	126	126	126	125	125	125	124	123	123	122	121	120	120		
	TOFL(STANDING WATER) ~ FT	9310	9585	9843	10097	10348	10551	10831	11147	11429	11709	12046	12361	12827	13254	13744	14407		
	TOFL(SLUSH) ~ FT	8394	8554	8799	8973	9204	9468	9676	9983	10286	10534	10851							
	TOFL(WET SNOW) ~ FT	8029	8198	8365	8533	8691	8853	9038	9256	9504	9740	9968							
	TOFL(DRY SNOW) ~ FT	8110	8281	8451	8621	8783	8946	9132	9349	9596	9830	10075							
21,000 lb 9525 kg	$V_1=V_R$ ~ KIAS	113	113	113	113	113	112	111	111	111	112	112	112	112	112	112	112		
	V_2 ~ KIAS	126	126	126	125	125	125	123	123	122	122	121	120	120	119	118	117		
	TOFL(STANDING WATER) ~ FT	9178	9424	9555	9847	10099	10257	10322	10539	10869	11107	11372	11718	12061	12443	12965	13459		
	TOFL(SLUSH) ~ FT	8282	8441	8658	8818	9038	9127	9182	9377	9721	9955	10205							
	TOFL(WET SNOW) ~ FT	7932	8086	8240	8394	8547	8628	8679	8865	9091	9306	9529							
	TOFL(DRY SNOW) ~ FT	8017	8173	8330	8487	8642	8724	8775	8960	9185	9399	9620							
20,000 lb 9072 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	111	109	109	109	109	109	109	109	109	109		
	V_2 ~ KIAS	126	126	126	126	126	125	123	122	120	120	119	118	118	117	116	116		
	TOFL(STANDING WATER) ~ FT	9086	9331	9558	9747	9992	10091	10127	10167	10276	10453	10736	10986	11307	11703	12093	12535		
	TOFL(SLUSH) ~ FT	8211	8367	8581	8737	8954	9055	9072	9106	9196	9366	9575							
	TOFL(WET SNOW) ~ FT	7878	8029	8181	8332	8482	8562	8586	8615	8701	8860	9061							
	TOFL(DRY SNOW) ~ FT	7957	8121	8275	8430	8583	8664	8687	8714	8798	8955	9154							
19,000 lb 8618 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	110	109	108	107	106	106	106	106	106	107		
	V_2 ~ KIAS	126	126	126	126	126	125	124	122	120	118	117	116	115	115	114	113		
	TOFL(STANDING WATER) ~ FT	8998	9239	9405	9645	9890	9987	10021	10038	10074	10006	10092	10313	10639	10929	11268	11654		
	TOFL(SLUSH) ~ FT	8147	8358	8509	8722	8890	8987	9001	9001	9026	8969	9048							
	TOFL(WET SNOW) ~ FT	7828	7976	8125	8274	8422	8500	8521	8532	8572	8548	8623							
	TOFL(DRY SNOW) ~ FT	7922	8073	8225	8377	8528	8607	8628	8636	8674	8646	8718							
18,000 lb 8165 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	111	110	109	108	106	104	103	103	104	104	104		
	V_2 ~ KIAS	127	126	126	126	126	125	124	122	120	118	116	114	113	112	112	111		
	TOFL(STANDING WATER) ~ FT	8912	9148	9312	9548	9789	9881	9913	9915	9949	9803	9717	9743	9985	10235	10526	10917		
	TOFL(SLUSH) ~ FT	8082	8289	8438	8647	8825	8968	8933	8917	8948	8817	8713							
	TOFL(WET SNOW) ~ FT	7782	7928	8075	8221	8367	8443	8462	8469	8492	8419	8372							
	TOFL(DRY SNOW) ~ FT	7832	8030	8180	8329	8479	8557	8575	8579	8600	8522	8471							
17,000 lb 7711 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	111	110	109	108	106	104	102	101	101	101	101		
	V_2 ~ KIAS	127	127	127	127	127	126	124	122	121	118	116	113	111	110	109	109		
	TOFL(STANDING WATER) ~ FT	8827	9059	9217	9452	9689	9780	9810	9810	9781	9693	9544	9423	9412	9629	9879	10160		
	TOFL(SLUSH) ~ FT	8020	8222	8369	8601	8833	8913	8931	8865	8862	8734	8581							
	TOFL(WET SNOW) ~ FT	7742	7895	8030	8173	8318	8392	8409	8412	8431	8355	8259							
	TOFL(DRY SNOW) ~ FT	7846	7993	8141	8288	8435	8512	8528	8529	8545	8465	8364							

STANDING WATER,
SLUSH, WET SNOW,
AND DRY SNOW
RUNWAY
CONDITIONS

RGACTO004C

Table 53

Flaps 15° Field Pressure Altitude (7000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	131	131	132	132	132	132	132	132	132	132								
	V_2 ~ KIAS	140	140	140	140	140	139	139	139	138	138								
	TOFL(STANDING WATER) ~ FT	13294	13611	14045	14481	14871	15217	15670	16189	16669	17287								
	TOFL(SLUSH) ~ FT	11899	12297	12696	13044	13423	13824	14197	14693	15163	15764								
	TOFL(WET SNOW) ~ FT	10686	10978	11289	11824	12097	12491	12840	13306	13758	14410								
	TOFL(DRY SNOW) ~ FT	10750	11039	11347	11657	11922	12226	12556	12948	13388	13879								
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	128	128	128	129	129	129	129	129	129	129	129							
	V_2 ~ KIAS	138	138	138	138	137	137	137	136	136	136	135							
	TOFL(STANDING WATER) ~ FT	12649	13015	13339	13754	14125	14530	14951	15362	15887	16459	16968							
	TOFL(SLUSH) ~ FT	11413	11778	12032	12434	12773	13094	13507	13969	14428	14981	15459							
	TOFL(WET SNOW) ~ FT	10269	10532	10826	11123	11375	11807	12193	12654	13072	13601	13782							
	TOFL(DRY SNOW) ~ FT	10345	10604	10896	11189	11438	11722	12020	12391	12795	13243	13713							
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	125	125	125	126	126	126	126	126	126	126	126	126						
	V_2 ~ KIAS	135	135	135	135	135	135	134	134	134	133	133	132						
	TOFL(STANDING WATER) ~ FT	12067	12426	12824	13226	13580	13790	14188	14637	15041	15567	16108	16638						
	TOFL(SLUSH) ~ FT	10886	11156	11522	11907	12159	12472	12843	13212	13675	14128	14651							
	TOFL(WET SNOW) ~ FT	9869	10110	10389	10671	10903	11172	11458	11830	12338	12814	13138							
	TOFL(DRY SNOW) ~ FT	9951	10193	10469	10746	10978	11242	11524	11853	12220	12627	13048							
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	122	122	122	122	122	122	122	123	123	123	123	123	123					
	V_2 ~ KIAS	133	133	133	133	132	132	132	131	131	131	130	130	129					
	TOFL(STANDING WATER) ~ FT	11472	11737	12100	12478	12814	13174	13473	13794	14160	14646	15139	15612	16264					
	TOFL(SLUSH) ~ FT	10285	10543	10919	11260	11515	11842	12139	12470	12841	13303	13708							
	TOFL(WET SNOW) ~ FT	9430	9645	9909	10168	10386	10634	10896	11199	11540	11917	12304							
	TOFL(DRY SNOW) ~ FT	9515	9731	9996	10256	10474	10715	10973	11272	11604	11972	12350							
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	119	119	119	119	119	119	120	120	120	120	120	120					
	V_2 ~ KIAS	131	130	130	130	130	130	129	129	128	128	128	127	126					
	TOFL(STANDING WATER) ~ FT	10829	11137	11499	11855	12089	12425	12779	13087	13512	13891	14230	14656	15243					
	TOFL(SLUSH) ~ FT	9687	9963	10321	10597	10898	11146	11488	11779	12174	12485	12842							
	TOFL(WET SNOW) ~ FT	9014	9214	9462	9705	9907	10129	10367	10642	10950	11295	11641							
	TOFL(DRY SNOW) ~ FT	9101	9302	9552	9796	9999	10221	10457	10730	11031	11364	11703							
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	115	115	116	116	116	116	116	116	116	117	117	117	117	117				
	V_2 ~ KIAS	128	128	128	128	127	127	127	126	126	125	125	124	124	123				
	TOFL(STANDING WATER) ~ FT	10194	10501	10818	11155	11440	11676	12002	12282	12666	13004	13425	13820	14373	14738				
	TOFL(SLUSH) ~ FT	9108	9309	9657	9983	10209	10510	10736	11066	11454	11761	12101							
	TOFL(WET SNOW) ~ FT	8593	8785	9013	9239	9423	9524	9840	10087	10360	10662	10970							
	TOFL(DRY SNOW) ~ FT	8681	8875	9104	9332	9516	9718	9933	10178	10448	10747	11049							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	113	113	113	114	114	114	114	114	114	114	114	114	114	115	115			
	V_2 ~ KIAS	126	126	126	126	125	125	125	124	124	123	123	122	121	121	120			
	TOFL(STANDING WATER) ~ FT	9763	10017	10330	10661	10856	11152	11398	11711	12007	12375	12685	13118	13545	14028	14661			
	TOFL(SLUSH) ~ FT	8726	8901	9184	9502	9718	9984	10226	10532	10813	11102	11416							
	TOFL(WET SNOW) ~ FT	8292	8463	8672	8886	9057	9247	9446	9672	9920	10196	10473							
	TOFL(DRY SNOW) ~ FT	8381	8554	8765	8980	9153	9343	9542	9767	10014	10286	10559							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	112	112	113	113	111	111	111	111	111	112	112	112	112	112	112	112		
	V_2 ~ KIAS	126	126	126	125	124	123	123	122	122	121	120	120	119	118	118	117		
	TOFL(STANDING WATER) ~ FT	9641	9885	10096	10355	10405	10550	10829	11080	11393	11689	12028	12344	12804	13234	13716	14288		
	TOFL(SLUSH) ~ FT	8622	8791	9032	9231	9259	9388	9677	9916	10220	10516	10779							
	TOFL(WET SNOW) ~ FT	8204	8370	8541	8718	8754	8863	9045	9254	9479	9729	9979							
	TOFL(DRY SNOW) ~ FT	8298	8466	8638	8816	8852	8961	9144	9352	9576	9823	10070							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	112	112	112	112	111	110	109	108	109	109	109	109	109	109	109	109		
	V_2 ~ KIAS	126	126	126	125	124	122	121	120	119	119	118	118	117	117	116	115		
	TOFL(STANDING WATER) ~ FT	9551	9790	9995	10229	10277	10306	10361	10485	10731	11041	11285	11635	11980	12358	12789	13360		
	TOFL(SLUSH) ~ FT	8553	8781	8955	9195	9167	9176	9225	9330	9542	9878	10128							
	TOFL(WET SNOW) ~ FT	8153	8314	8480	8633	8657	8684	8726	8824	9029	9253	9475							
	TOFL(DRY SNOW) ~ FT	8252	8415	8582	8737	8771	8786	8827	8924	9128	9351	9570							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	112	112	112	112	111	110	109	107	106	106	106	106	106	106	107	107		
	V_2 ~ KIAS	127	126	126	126	124	123	121	119	118	117	116	116	115	114	113	113		
	TOFL(STANDING WATER) ~ FT	9463	9638	9893	10124	10171	10198	10219	10173	10192	10385	10656	10910	11200	11533	11982	12409		
	TOFL(SLUSH) ~ FT	8485	8708	8905	9122	9162	9104	9116	9117	9076	9239	9504							
	TOFL(WET SNOW) ~ FT	8107	8263	8424	8571	8604	8619	8638	8635	8652	8808	9006							
	TOFL(DRY SNOW) ~ FT	8210	8369	8531	8681	8714	8727	8745	8739	8753	8908	9104							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	112	112	112	112	111	110	108	107	105	104	103	103	104	104	104	104		
	V_2 ~ KIAS	127	127	126	126	125	123	121	120	117	116	114	113	113	112	111	110		
	TOFL(STANDING WATER) ~ FT	9377	9548	9796	9962	10058	10033	10061	10052	10010	10001	10017	10252	10503	10849	11169	11534		
	TOFL(SLUSH) ~ FT	8474	8653	8830	9064	9103	9097	9045	9022	8933	8971	8979							
	TOFL(WET SNOW) ~ FT	8065	8217	8372	8515	8547	8560	8576	8562	8529	8559	8584							
	TOFL(DRY SNOW) ~ FT	8174	8328	8486	8631	8652	8674	8689	8672	8636	8663	8685							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	112	112	112	112	111	109	108	107	105	104	102	101	101	101	101	101		
	V_2 ~ KIAS	127	127	127	126	125	123	122	120	118	116	113	111	110	110	109	108		
	TOFL(STANDING WATER) ~ FT	9292	9455	9700	9861	9906	9930	9956	9946	9843	9808	9722	9679	9893	10128	10401	10710		
	TOFL(SLUSH) ~ FT	8422	8603	8841	8994	9023	9042	9031	8939	8849	8830	8727							
	TOFL(WET SNOW) ~ FT	8029	8176	8327	8465	8496	8507	8520	8503	8467	8443	8395							
	TOFL(DRY SNOW) ~ FT	8143	8293	8446	8586	8617	8628	8640	8621	8581	8553	8501							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACT0004C

Table 54

Flaps 15° Field Pressure Altitude (8000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	131	131	132	132	132	132	132	132	132									
	V_2 ~ KIAS	140	140	140	139	139	139	139	138	138									
	TOFL(STANDING WATER) ~ FT	13942	14406	14856	15221	15670	16136	16619	17185	17801									
	TOFL(SLUSH) ~ FT	12588	12962	13402	13820	14185	14647	15084	15570	16185									
	TOFL(WET SNOW) ~ FT	11179	11736	12074	12485	12898	13235	13682	14153	14608									
	TOFL(DRY SNOW) ~ FT	11242	11577	11900	12222	12543	12881	13234	13669	14172									
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	128	128	129	129	129	129	129	129	129	129								
	V_2 ~ KIAS	138	138	137	137	137	136	136	136	136	135								
	TOFL(STANDING WATER) ~ FT	13351	13692	14115	14538	14963	15394	15774	16303	16890	17493								
	TOFL(SLUSH) ~ FT	11949	12363	12777	13157	13510	13911	14292	14799	15362	15871								
	TOFL(WET SNOW) ~ FT	10743	11051	11356	11826	12192	12587	12931	13416	13883	14166								
	TOFL(DRY SNOW) ~ FT	10815	11120	11422	11722	12021	12327	12663	13064	13524	14000								
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	125	125	126	126	126	126	126	126	126	126	126							
	V_2 ~ KIAS	135	135	135	135	134	134	134	133	133	133	132							
	TOFL(STANDING WATER) ~ FT	12753	13166	13574	13803	14201	14608	15030	15492	15984	16532	17110							
	TOFL(SLUSH) ~ FT	11447	11844	12162	12477	12843	13170	13566	14041	14516	15048	15554							
	TOFL(WET SNOW) ~ FT	10314	10607	10891	11176	11456	11886	12279	12653	13059	13333	13489							
	TOFL(DRY SNOW) ~ FT	10400	10687	10968	11248	11524	11813	12111	12477	12897	13324	13794							
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	122	122	122	122	122	122	123	123	123	123	123	123						
	V_2 ~ KIAS	133	133	133	132	132	132	131	131	131	130	130	129						
	TOFL(STANDING WATER) ~ FT	12044	12421	12812	13190	13485	13779	14167	14620	15042	15546	16068	16598						
	TOFL(SLUSH) ~ FT	10848	11203	11508	11872	12090	12462	12750	13178	13661	14087	14551							
	TOFL(WET SNOW) ~ FT	9850	10110	10380	10642	10900	11169	11444	11783	12316	12715	13019							
	TOFL(DRY SNOW) ~ FT	9940	10200	10470	10725	10979	11243	11516	11848	12229	12615	13033							
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	119	119	119	119	119	120	120	120	120	120	120	120					
	V_2 ~ KIAS	130	130	130	130	129	129	129	128	128	128	127	127	126					
	TOFL(STANDING WATER) ~ FT	11448	11816	12080	12444	12796	13077	13449	13875	14158	14622	15115	15571	16196					
	TOFL(SLUSH) ~ FT	10271	10554	10899	11159	11499	11756	12116	12380	12839	13205	13682							
	TOFL(WET SNOW) ~ FT	9411	9663	9906	10142	10376	10623	10877	11186	11542	11896	12179							
	TOFL(DRY SNOW) ~ FT	9503	9756	9999	10235	10469	10711	10961	11263	11610	11957	12333							
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	115	116	116	116	116	116	116	116	117	117	117	117	117					
	V_2 ~ KIAS	128	128	127	127	127	126	126	126	125	125	124	124	123					
	TOFL(STANDING WATER) ~ FT	10760	11123	11465	11702	12010	12358	12620	13010	13367	13799	14242	14547	15109					
	TOFL(SLUSH) ~ FT	9607	9948	10213	10527	10751	11074	11416	11708	12042	12449	12756							
	TOFL(WET SNOW) ~ FT	8965	9206	9426	9641	9854	10075	10301	10577	10896	11212	11560							
	TOFL(DRY SNOW) ~ FT	9058	9300	9521	9737	9950	10170	10396	10669	10982	11291	11626							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	113	113	114	114	114	114	114	114	114	114	114	114	115	115				
	V_2 ~ KIAS	126	126	126	125	125	124	124	124	123	123	122	121	121	120				
	TOFL(STANDING WATER) ~ FT	10305	10624	10886	11175	11484	11718	12020	12321	12724	13125	13468	13852	14419	14768				
	TOFL(SLUSH) ~ FT	9157	9474	9725	10002	10246	10548	10767	11103	11443	11786	12143							
	TOFL(WET SNOW) ~ FT	8646	8859	9065	9264	9465	9668	9877	10129	10419	10704	11013							
	TOFL(DRY SNOW) ~ FT	8741	8955	9162	9362	9563	9767	9975	10225	10513	10793	11097							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	112	113	112	111	111	111	111	111	112	112	112	112	112	112	112			
	V_2 ~ KIAS	126	126	124	123	123	122	122	121	121	121	120	119	119	118	117			
	TOFL(STANDING WATER) ~ FT	10169	10384	10494	10638	10859	11154	11373	11709	12080	12373	12684	13105	13540	14015	14650			
	TOFL(SLUSH) ~ FT	9044	9319	9419	9475	9701	9988	10223	10518	10829	11101	11403							
	TOFL(WET SNOW) ~ FT	8551	8725	8817	8887	9069	9258	9449	9678	9943	10201	10479							
	TOFL(DRY SNOW) ~ FT	8651	8826	8917	8986	9170	9359	9550	9779	10041	10296	10570							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	112	112	112	110	109	108	108	109	109	109	109	109	109	109	109			
	V_2 ~ KIAS	126	126	125	123	122	120	120	119	119	118	118	117	117	116	115			
	TOFL(STANDING WATER) ~ FT	10012	10278	10373	10420	10469	10502	10779	11017	11361	11619	11971	12273	12656	13152	13626			
	TOFL(SLUSH) ~ FT	8968	9235	9318	9359	9320	9351	9603	9853	10186	10451	10727							
	TOFL(WET SNOW) ~ FT	8495	8663	8738	8771	8808	8846	9009	9220	9459	9688	9934							
	TOFL(DRY SNOW) ~ FT	8599	8769	8844	8876	8911	8949	9112	9322	9560	9787	10031							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	112	112	111	110	109	108	107	106	106	106	106	106	106	107	107			
	V_2 ~ KIAS	126	126	125	123	122	120	119	117	117	116	116	115	114	114	113			
	TOFL(STANDING WATER) ~ FT	9918	10162	10265	10310	10328	10348	10374	10437	10674	10983	11223	11490	11902	12263	12683			
	TOFL(SLUSH) ~ FT	8925	9182	9261	9272	9300	9221	9242	9298	9511	9741	10054							
	TOFL(WET SNOW) ~ FT	8443	8605	8677	8708	8728	8737	8752	8803	9006	9211	9428							
	TOFL(DRY SNOW) ~ FT	8553	8717	8789	8818	8838	8846	8858	8908	9110	9314	9528							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	112	112	111	110	109	108	106	105	105	103	104	104	104	104	104			
	V_2 ~ KIAS	127	126	125	124	122	120	119	117	116	114	114	113	112	111	111			
	TOFL(STANDING WATER) ~ FT	9822	10062	10162	10190	10221	10240	10247	10198	10307	10324	10555	10848	11136	11446	11811			
	TOFL(SLUSH) ~ FT	8914	9103	9179	9216	9214	9207	9139	9146	9238	9206	9406							
	TOFL(WET SNOW) ~ FT	8396	8553	8622	8650	8668	8675	8671	8673	8757	8784	8976							
	TOFL(DRY SNOW) ~ FT	8512	8671	8739	8767	8784	8790	8785	8784	8866	8889	9080							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	112	112	111	110	109	108	106	105	104	102	101	101	101	101	101			
	V_2 ~ KIAS	127	127	125	124	122	121	119	117	116	114	112	111	110	109	108			
	TOFL(STANDING WATER) ~ FT	9731	9964	10046	10087	10117	10135	10080	10089	10102	10026	10006	10160	10411	10694	11057			
	TOFL(SLUSH) ~ FT	8868	9048	9121	9141	9161	9147	9086	9061	9084	9011	8932							
	TOFL(WET SNOW) ~ FT	8356	8507	8572	8598	8615	8620	8614	8613	8633	8610	8592							
	TOFL(DRY SNOW) ~ FT	8478	8631	8697	8722	8738	8742	8735	8731	8748	8722	8699							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACT0004C

Table 55

Flaps 15° Field Pressure Altitude (9000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	132	132	132	132	132	132	132											
	V_2 ~ KIAS	140	140	139	139	139	138	138											
	TOFL(STANDING WATER) ~ FT	14839	15277	15657	16134	16617	17114	17636											
	TOFL(SLUSH) ~ FT	13380	13786	14242	14634	15073	15561	15999											
	TOFL(WET SNOW) ~ FT	12051	12449	12875	13219	13663	13799	14239											
	TOFL(DRY SNOW) ~ FT	11880	12188	12522	12868	13218	13583	13970											
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	129	129	129	129	129	129	129	129										
	V_2 ~ KIAS	137	137	137	137	136	136	136	136										
	TOFL(STANDING WATER) ~ FT	14105	14516	14954	15395	15860	16244	16735	17300										
	TOFL(SLUSH) ~ FT	12762	13142	13495	13907	14358	14745	15189	15734										
	TOFL(WET SNOW) ~ FT	11340	11810	12175	12578	12938	13101	13479	13870										
	TOFL(DRY SNOW) ~ FT	11407	11695	12006	12319	12654	12992	13350	13784										
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126								
	V_2 ~ KIAS	135	135	135	134	134	134	133	133	132	132								
	TOFL(STANDING WATER) ~ FT	13566	13867	14198	14618	15039	15476	15915	16372	16944	17565								
	TOFL(SLUSH) ~ FT	12153	12454	12856	13236	13583	13989	14361	14864	15431	15932								
	TOFL(WET SNOW) ~ FT	10881	11152	11445	11887	12275	12492	12865	13254	13420	13828								
	TOFL(DRY SNOW) ~ FT	10960	11226	11516	11812	12110	12420	12748	13143	13585	14077								
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	122	122	122	123	123	123	123	123	123	123	123							
	V_2 ~ KIAS	133	132	132	132	131	131	131	130	130	129	129							
	TOFL(STANDING WATER) ~ FT	12807	13178	13568	13790	14185	14687	15011	15411	15938	16493	17068							
	TOFL(SLUSH) ~ FT	11501	11857	12086	12466	12829	13151	13543	13946	14451	14930	15507							
	TOFL(WET SNOW) ~ FT	10373	10628	10895	11171	11447	11734	12037	12361	12542	12888	13263							
	TOFL(DRY SNOW) ~ FT	10464	10712	10976	11247	11520	11803	12103	12461	12862	13294	13758							
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	119	119	119	120	119	120	120	120	120	120	120						
	V_2 ~ KIAS	130	130	130	129	129	129	128	128	127	127	127	126						
	TOFL(STANDING WATER) ~ FT	12080	12422	12801	13172	13465	13850	14146	14573	14994	15515	16028	16570						
	TOFL(SLUSH) ~ FT	10897	11193	11499	11837	12126	12419	12729	13146	13552	14051	14607							
	TOFL(WET SNOW) ~ FT	9904	10132	10376	10630	10885	11149	11429	11759	12025	12381	12757							
	TOFL(DRY SNOW) ~ FT	9998	10227	10471	10720	10971	11230	11504	11829	12192	12592	12999							
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	116	116	116	116	116	116	116	116	117	117	117	117	117					
	V_2 ~ KIAS	128	127	127	127	126	126	125	125	125	124	124	123	122					
	TOFL(STANDING WATER) ~ FT	11462	11772	12019	12361	12722	12996	13363	13753	14157	14521	14917	15406	16027					
	TOFL(SLUSH) ~ FT	10272	10524	10817	11087	11411	11682	12019	12355	12706	13093	13493							
	TOFL(WET SNOW) ~ FT	9432	9638	9859	10087	10315	10551	10804	11104	11438	11784	12142							
	TOFL(DRY SNOW) ~ FT	9528	9735	9957	10184	10412	10647	10895	11188	11514	11872	12233							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	114	114	114	114	114	114	114	114	114	114	114	114	115	115				
	V_2 ~ KIAS	126	125	125	125	124	124	124	123	123	122	122	121	120	120				
	TOFL(STANDING WATER) ~ FT	10886	11179	11498	11811	12046	12392	12657	13043	13466	13840	14294	14593	15196	15758				
	TOFL(SLUSH) ~ FT	9732	10003	10297	10565	10786	11106	11407	11738	12057	12482	12782							
	TOFL(WET SNOW) ~ FT	9074	9266	9474	9684	9895	10112	10342	10612	10914	11250	11590							
	TOFL(DRY SNOW) ~ FT	9173	9365	9574	9785	9996	10213	10441	10709	11007	11334	11661							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	112	111	111	111	111	111	111	111	112	112	112	112	112	112				
	V_2 ~ KIAS	125	124	123	123	122	122	121	121	120	120	119	119	118	117				
	TOFL(STANDING WATER) ~ FT	10632	10696	10883	11177	11482	11695	12016	12312	12699	13037	13451	13846	14406	14938				
	TOFL(SLUSH) ~ FT	9502	9544	9728	10006	10246	10524	10765	11095	11418	11771	12122							
	TOFL(WET SNOW) ~ FT	8888	8936	9082	9276	9472	9671	9881	10128	10402	10703	11002							
	TOFL(DRY SNOW) ~ FT	8990	9038	9185	9378	9575	9774	9985	10230	10501	10798	11092							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	112	111	110	109	108	108	108	109	109	109	109	109	109	109	110			
	V_2 ~ KIAS	125	124	122	121	120	120	119	119	118	118	117	117	116	116	115			
	TOFL(STANDING WATER) ~ FT	10508	10555	10606	10672	10801	11103	11320	11637	11929	12308	12607	13034	13464	13933	14558			
	TOFL(SLUSH) ~ FT	9414	9427	9469	9529	9645	9875	10144	10410	10738	11041	11360							
	TOFL(WET SNOW) ~ FT	8807	8839	8875	8927	9037	9220	9412	9634	9879	10149	10414							
	TOFL(DRY SNOW) ~ FT	8914	8946	8982	9032	9142	9326	9518	9739	9983	10250	10511							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	112	111	110	108	107	106	106	106	106	106	106	106	106	107	107			
	V_2 ~ KIAS	125	124	122	121	119	118	117	117	116	116	115	114	114	113	113			
	TOFL(STANDING WATER) ~ FT	10342	10387	10429	10462	10491	10519	10704	10953	11279	11546	11808	12192	12558	12975	13515			
	TOFL(SLUSH) ~ FT	9336	9368	9389	9403	9345	9368	9476	9786	10034	10361	10630							
	TOFL(WET SNOW) ~ FT	8746	8777	8804	8825	8841	8872	8973	9175	9394	9634	9867							
	TOFL(DRY SNOW) ~ FT	8860	8890	8917	8936	8951	8981	9082	9283	9501	9739	9970							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	112	111	109	108	107	106	105	104	103	104	104	104	104	104	104			
	V_2 ~ KIAS	126	124	123	121	119	118	116	115	114	114	113	112	112	111	110			
	TOFL(STANDING WATER) ~ FT	10239	10283	10323	10355	10374	10366	10400	10448	10607	10865	11155	11419	11739	12177	12582			
	TOFL(SLUSH) ~ FT	9304	9291	9319	9346	9333	9244	9272	9313	9451	9678	9891							
	TOFL(WET SNOW) ~ FT	8692	8720	8746	8764	8771	8770	8792	8828	8959	9175	9379							
	TOFL(DRY SNOW) ~ FT	8812	8840	8865	8882	8888	8885	8905	8940	9069	9283	9485							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	112	110	109	108	107	106	104	103	102	101	101	101	101	101	101			
	V_2 ~ KIAS	126	125	123	121	120	118	117	115	113	112	111	110	109	109	108			
	TOFL(STANDING WATER) ~ FT	10136	10179	10217	10247	10251	10260	10280	10213	10235	10306	10457	10708	11042	11350	11696			
	TOFL(SLUSH) ~ FT	9253	9281	9244	9263	9252	9249	9179	9168	9140	9196	9338							
	TOFL(WET SNOW) ~ FT	8644	8671	8694	8710	8716	8713	8722	8707	8737	8785	8919							
	TOFL(DRY SNOW) ~ FT	8770	8797	8820	8835	8840	8835	8843	8825	8852	8897	9029							

STANDING WATER,
SLUSH, WET SNOW,
AND DRY SNOW
RUNWAY
CONDITIONS

RGACT0004C

Table 56

Flaps 15° Field Pressure Altitude (10,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	132	132	132	132	132	132												
	V_2 ~ KIAS	139	139	139	139	138	138												
	TOFL(STANDING WATER) ~ FT	15735	16114	16609	17118	17638	18178												
	TOFL(SLUSH) ~ FT	14230	14607	15057	15554	16054	16501												
	TOFL(WET SNOW) ~ FT	12863	13191	13644	14027	14162	14542												
	TOFL(DRY SNOW) ~ FT	12511	12842	13201	13574	13956	14357												
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	129	129	129	129	129	129	129											
	V_2 ~ KIAS	137	137	136	136	136	136	135											
	TOFL(STANDING WATER) ~ FT	14951	15389	15845	16337	16808	17309	17768											
	TOFL(SLUSH) ~ FT	13488	13895	14338	14743	15184	15677	16114											
	TOFL(WET SNOW) ~ FT	12167	12564	12948	13334	13508	13878	13929											
	TOFL(DRY SNOW) ~ FT	12000	12307	12632	12989	13343	13713	14098											
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	126	126	126	126	126	126	126	126										
	V_2 ~ KIAS	135	134	134	134	133	133	133	132										
	TOFL(STANDING WATER) ~ FT	14199	14610	15045	15492	15945	16416	16886	17465										
	TOFL(SLUSH) ~ FT	12854	13231	13579	13997	14439	14825	15286	15831										
	TOFL(WET SNOW) ~ FT	11442	11872	12269	12677	12881	13250	13381	13794										
	TOFL(DRY SNOW) ~ FT	11514	11798	12105	12423	12748	13087	13441	13885										
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123								
	V_2 ~ KIAS	132	132	131	131	131	131	130	130	130	129								
	TOFL(STANDING WATER) ~ FT	13573	13870	14192	14608	15032	15466	15900	16427	16957	17552								
	TOFL(SLUSH) ~ FT	12173	12458	12830	13160	13555	13978	14326	14857	15361	15908								
	TOFL(WET SNOW) ~ FT	10897	11162	11446	11746	12125	12504	12724	13144	13592	14432								
	TOFL(DRY SNOW) ~ FT	10979	11240	11521	11813	12110	12419	12741	13147	13601	14064								
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	119	120	120	120	120	120	120	120	120	120							
	V_2 ~ KIAS	130	129	129	129	128	128	128	127	127	127	126							
	TOFL(STANDING WATER) ~ FT	12809	13173	13558	13871	14172	14575	14976	15460	15944	16491	17053							
	TOFL(SLUSH) ~ FT	11504	11833	12130	12436	12742	13119	13524	13918	14463	14900	15486							
	TOFL(WET SNOW) ~ FT	10381	10626	10892	11161	11439	11726	12022	12436	12875	13608	14040							
	TOFL(DRY SNOW) ~ FT	10477	10718	10977	11244	11517	11799	12093	12461	12872	13291	13745							
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	116	116	116	116	116	116	116	117	117	117	117	117						
	V_2 ~ KIAS	127	127	126	126	126	125	125	125	124	124	123	123						
	TOFL(STANDING WATER) ~ FT	12032	12367	12737	13021	13391	13771	14148	14435	14929	15404	15992	16464						
	TOFL(SLUSH) ~ FT	10837	11088	11420	11699	12036	12332	12633	13001	13470	13884	14415							
	TOFL(WET SNOW) ~ FT	9869	10088	10324	10568	10820	11084	11352	11656	11980	12500	12826							
	TOFL(DRY SNOW) ~ FT	9967	10187	10423	10666	10913	11170	11436	11768	12138	12510	12950							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	114	114	114	114	114	114	114	114	114	115	115	115	115					
	V_2 ~ KIAS	125	125	124	124	124	123	123	122	122	122	121	120	120					
	TOFL(STANDING WATER) ~ FT	11510	11816	12067	12421	12767	13043	13407	13841	14231	14578	15046	15529	16170					
	TOFL(SLUSH) ~ FT	10327	10571	10868	11128	11452	11725	12059	12407	12778	13139	13578							
	TOFL(WET SNOW) ~ FT	9484	9690	9908	10133	10362	10599	10849	11161	11508	11953	12308							
	TOFL(DRY SNOW) ~ FT	9585	9792	10010	10235	10464	10701	10945	11250	11589	11927	12294							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	111	111	111	111	111	111	111	112	112	112	112	112	112	112				
	V_2 ~ KIAS	123	123	122	122	121	121	121	120	120	119	119	118	118	117				
	TOFL(STANDING WATER) ~ FT	10900	11190	11504	11729	12048	12397	12658	13057	13493	13843	14302	14600	15188	15770				
	TOFL(SLUSH) ~ FT	9743	10016	10263	10570	10790	11091	11405	11724	12081	12483	12788							
	TOFL(WET SNOW) ~ FT	9098	9286	9489	9696	9905	10124	10350	10631	10944	11257	11601							
	TOFL(DRY SNOW) ~ FT	9201	9390	9594	9801	10011	10230	10455	10734	11043	11347	11677							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	110	109	108	108	108	109	109	109	109	109	109	109	109	110				
	V_2 ~ KIAS	123	121	120	120	119	119	119	118	118	117	117	116	116	115				
	TOFL(STANDING WATER) ~ FT	10674	10747	10826	11134	11425	11650	11966	12269	12665	12977	13392	13780	14343	14822				
	TOFL(SLUSH) ~ FT	9546	9610	9670	9962	10176	10458	10720	10986	11368	11677	12004							
	TOFL(WET SNOW) ~ FT	8939	8995	9058	9246	9440	9639	9843	10097	10379	10655	10954							
	TOFL(DRY SNOW) ~ FT	9046	9102	9165	9354	9549	9748	9952	10204	10484	10756	11049							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	110	109	108	107	106	106	106	106	106	106	106	106	107	107				
	V_2 ~ KIAS	123	121	120	118	117	117	116	116	116	115	115	114	113	113				
	TOFL(STANDING WATER) ~ FT	10566	10606	10641	10702	10755	10993	11265	11509	11885	12160	12534	12874	13374	13839				
	TOFL(SLUSH) ~ FT	9473	9507	9507	9561	9554	9812	10088	10337	10633	10960	11258							
	TOFL(WET SNOW) ~ FT	8875	8900	8921	8968	9007	9189	9373	9600	9853	10097	10360							
	TOFL(DRY SNOW) ~ FT	8989	9014	9034	9079	9117	9300	9484	9711	9963	10204	10463							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	110	109	108	106	105	104	103	103	104	104	104	104	104	104				
	V_2 ~ KIAS	123	122	120	119	117	116	114	114	114	113	112	112	111	110				
	TOFL(STANDING WATER) ~ FT	10460	10499	10532	10546	10513	10571	10601	10917	11243	11479	11752	12125	12488	12890				
	TOFL(SLUSH) ~ FT	9395	9421	9449	9440	9372	9408	9448	9681	10010	10240	10560							
	TOFL(WET SNOW) ~ FT	8817	8841	8860	8872	8878	8922	8955	9156	9386	9599	9829							
	TOFL(DRY SNOW) ~ FT	8938	8961	8979	8990	8995	9037	9069	9271	9499	9711	9938							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	110	109	107	106	105	104	102	102	101	101	101	101	101	101				
	V_2 ~ KIAS	124	122	120	119	117	116	114	113	112	111	110	109	109	108				
	TOFL(STANDING WATER) ~ FT	10296	10334	10365	10389	10406	10406	10414	10506	10621	10782	11086	11343	11655	12001				
	TOFL(SLUSH) ~ FT	9393	9346	9366	9385	9369	9303	9293	9378	9471	9622	9837							
	TOFL(WET SNOW) ~ FT	8766	8789	8806	8816	8820	8827	8824	8901	8989	9132	9335							
	TOFL(DRY SNOW) ~ FT	8894	8916	8933	8941	8945	8950	8945	9021	9107	9248	9449							

STANDING WATER,
SLUSH, WET SNOW,
AND DRY SNOW
RUNWAY
CONDITIONS

RGACT0004C

Table 57

Flaps 15° Field Pressure Altitude (11,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	132	132	132	132														
	V_2 ~ KIAS	139	139	138	138														
	TOFL(STANDING WATER) ~ FT	16601	17100	17629	18181														
	TOFL(SLUSH) ~ FT	15046	15533	16049	16513														
	TOFL(WET SNOW) ~ FT	13632	14000	14637	14878														
	TOFL(DRY SNOW) ~ FT	13189	13549	13938	14347														
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	129	129	129	129	129													
	V_2 ~ KIAS	136	136	136	136	135													
	TOFL(STANDING WATER) ~ FT	15842	16325	16823	17341	17846													
	TOFL(SLUSH) ~ FT	14331	14724	15172	15679	16189													
	TOFL(WET SNOW) ~ FT	12939	13314	13789	14080	14404													
	TOFL(DRY SNOW) ~ FT	12625	12970	13331	13710	14093													
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	126	126	126	126	126	126	126											
	V_2 ~ KIAS	134	134	134	133	133	133	132											
	TOFL(STANDING WATER) ~ FT	15046	15486	15950	16433	16922	17424	17939											
	TOFL(SLUSH) ~ FT	13576	13985	14434	14830	15267	15760	16271											
	TOFL(WET SNOW) ~ FT	12265	12662	13066	13233	13360	13738	14121											
	TOFL(DRY SNOW) ~ FT	12103	12411	12742	13090	13443	13810	14204											
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	123	123	123	123	123	123	123	123										
	V_2 ~ KIAS	132	131	131	131	130	130	130	129										
	TOFL(STANDING WATER) ~ FT	14197	14607	15039	15488	15938	16406	16885	17468										
	TOFL(SLUSH) ~ FT	12831	13153	13554	13988	14354	14793	15281	15721										
	TOFL(WET SNOW) ~ FT	11446	11739	12257	12574	12830	13257	13689	14180										
	TOFL(DRY SNOW) ~ FT	11523	11806	12109	12428	12750	13085	13445	13882										
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120								
	V_2 ~ KIAS	129	129	128	128	128	127	127	127	126	126								
	TOFL(STANDING WATER) ~ FT	13565	13927	14183	14600	15021	15453	15895	16415	16919	17528								
	TOFL(SLUSH) ~ FT	12134	12434	12815	13151	13542	13886	14317	14834	15301	15910								
	TOFL(WET SNOW) ~ FT	10893	11157	11441	11737	12025	12403	12787	13221	13661	14406								
	TOFL(DRY SNOW) ~ FT	10982	11242	11521	11813	12107	12412	12741	13136	13568	14042								
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	116	116	116	116	116	116	117	117	117	117	117							
	V_2 ~ KIAS	126	126	126	125	125	125	124	124	124	123	123							
	TOFL(STANDING WATER) ~ FT	12748	13108	13405	13798	14093	14477	14889	15315	15890	16432	16882							
	TOFL(SLUSH) ~ FT	11428	11701	12048	12394	12670	13038	13375	13832	14344	14832	15275							
	TOFL(WET SNOW) ~ FT	10331	10569	10827	11100	11369	11725	12086	12490	12902	13522	13911							
	TOFL(DRY SNOW) ~ FT	10431	10669	10923	11188	11455	11732	12030	12385	12839	13266	13650							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	114	114	114	114	114	114	114	114	114	115	115	115						
	V_2 ~ KIAS	125	124	124	123	123	123	122	122	121	121	120	120						
	TOFL(STANDING WATER) ~ FT	12080	12433	12785	13135	13442	13824	14225	14555	14966	15481	15999	16540						
	TOFL(SLUSH) ~ FT	10881	11134	11464	11746	12086	12377	12687	13048	13500	13931	14450							
	TOFL(WET SNOW) ~ FT	9918	10138	10373	10619	10870	11134	11410	11721	12041	12472	12817							
	TOFL(DRY SNOW) ~ FT	10021	10242	10477	10722	10969	11225	11499	11824	12177	12564	12976							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	111	111	111	111	111	111	112	112	112	112	112	112	112					
	V_2 ~ KIAS	122	122	122	121	121	120	120	120	119	119	118	118	117					
	TOFL(STANDING WATER) ~ FT	11517	11822	12072	12427	12774	13049	13424	13846	14216	14581	15054	15543	16168					
	TOFL(SLUSH) ~ FT	10273	10579	10816	11135	11463	11730	12071	12411	12755	13138	13550							
	TOFL(WET SNOW) ~ FT	9499	9705	9920	10146	10375	10611	10864	11171	11498	11856	12271							
	TOFL(DRY SNOW) ~ FT	9605	9812	10028	10254	10482	10718	10969	11266	11585	11936	12307							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	109	108	108	109	109	109	109	109	109	109	109	109	109	110				
	V_2 ~ KIAS	120	120	119	119	119	118	118	118	117	117	116	116	115	115				
	TOFL(STANDING WATER) ~ FT	10868	11151	11462	11686	12003	12348	12613	13000	13331	13775	14218	14674	15178	15659				
	TOFL(SLUSH) ~ FT	9716	9981	10212	10512	10750	11047	11309	11662	11989	12345	12781							
	TOFL(WET SNOW) ~ FT	9093	9260	9460	9665	9873	10087	10316	10586	10877	11197	11538							
	TOFL(DRY SNOW) ~ FT	9201	9369	9570	9776	9984	10198	10427	10694	10982	11297	11627							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	108	107	106	106	106	106	106	106	106	106	106	107	107	107				
	V_2 ~ KIAS	120	119	118	117	116	116	116	115	115	115	114	114	113	112				
	TOFL(STANDING WATER) ~ FT	10697	10763	10831	11089	11309	11596	11833	12202	12557	12898	13294	13696	14212	14728				
	TOFL(SLUSH) ~ FT	9571	9618	9678	9838	10131	10353	10654	10928	11201	11531	11862							
	TOFL(WET SNOW) ~ FT	8973	9022	9075	9217	9407	9600	9807	10048	10308	10592	10888							
	TOFL(DRY SNOW) ~ FT	9087	9136	9188	9330	9521	9715	9921	10162	10419	10699	10990							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	108	107	105	104	104	103	103	103	104	104	104	104	104	104				
	V_2 ~ KIAS	120	119	117	116	115	114	114	113	113	112	112	111	111	110				
	TOFL(STANDING WATER) ~ FT	10589	10627	10661	10721	10777	10919	11229	11460	11798	12096	12466	12800	13250	13709				
	TOFL(SLUSH) ~ FT	9501	9532	9531	9584	9593	9746	9975	10293	10568	10831	11175							
	TOFL(WET SNOW) ~ FT	8913	8936	8956	9001	9043	9165	9354	9570	9800	10050	10309							
	TOFL(DRY SNOW) ~ FT	9033	9056	9075	9120	9160	9282	9472	9687	9916	10164	10419							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	108	106	105	104	103	102	101	101	101	101	101	101	101	101				
	V_2 ~ KIAS	121	119	118	116	115	113	112	111	111	110	110	109	108	107				
	TOFL(STANDING WATER) ~ FT	10484	10521	10553	10583	10539	10592	10721	10859	11094	11325	11670	11959	12359	12751				
	TOFL(SLUSH) ~ FT	9425	9450	9476	9471	9403	9435	9498	9610	9883	10170	10412							
	TOFL(WET SNOW) ~ FT	8860	8882	8900	8915	8922	8961	9017	9121	9327	9548	9772							
	TOFL(DRY SNOW) ~ FT	8988	9010	9027	9041	9046	9084	9139	9241	9448	9666	9888							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACT0004C

Table 58

Flaps 15° Field Pressure Altitude (12,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	$V_1=V_R$ ~ KIAS	132	132																
	V_2 ~ KIAS	138	138																
	TOFL(STANDING WATER) ~ FT	17884	18424																
	TOFL(SLUSH) ~ FT	16213	16730																
	TOFL(WET SNOW) ~ FT	14634	15101																
	TOFL(DRY SNOW) ~ FT	14079	14472																
27,000 lb 12,247 kg	$V_1=V_R$ ~ KIAS	129	129	129	129														
	V_2 ~ KIAS	136	136	136	135														
	TOFL(STANDING WATER) ~ FT	17003	17510	18045	18613														
	TOFL(SLUSH) ~ FT	15350	15825	16348	16903														
	TOFL(WET SNOW) ~ FT	14112	14279	14622	15484														
	TOFL(DRY SNOW) ~ FT	13470	13835	14225	14647														
26,000 lb 11,793 kg	$V_1=V_R$ ~ KIAS	126	126	126	126	126													
	V_2 ~ KIAS	134	133	133	133	133													
	TOFL(STANDING WATER) ~ FT	16125	16599	17100	17628	18160													
	TOFL(SLUSH) ~ FT	14589	15040	15419	15935	16455													
	TOFL(WET SNOW) ~ FT	13195	13403	13750	14492	15889													
	TOFL(DRY SNOW) ~ FT	12880	13216	13575	13962	14351													
25,000 lb 11,340 kg	$V_1=V_R$ ~ KIAS	123	123	123	123	123	123												
	V_2 ~ KIAS	131	131	130	130	130	129												
	TOFL(STANDING WATER) ~ FT	15208	15650	16114	16604	17098	17610												
	TOFL(SLUSH) ~ FT	13723	14131	14575	14962	15445	15915												
	TOFL(WET SNOW) ~ FT	12397	12650	12947	13300	13600	13883												
	TOFL(DRY SNOW) ~ FT	12244	12552	12881	13234	13589	13960												
24,000 lb 10,886 kg	$V_1=V_R$ ~ KIAS	120	120	120	120	120	120	120	120										
	V_2 ~ KIAS	129	128	128	128	127	127	127	126										
	TOFL(STANDING WATER) ~ FT	14346	14758	15189	15644	16103	16574	17047	17638										
	TOFL(SLUSH) ~ FT	12966	13288	13687	14126	14477	14939	15416	15736										
	TOFL(WET SNOW) ~ FT	11571	11857	12073	12376	12675	12986	13327	13695										
	TOFL(DRY SNOW) ~ FT	11653	11936	12237	12559	12884	13222	13575	14026										
23,000 lb 10,433 kg	$V_1=V_R$ ~ KIAS	116	116	116	116	117	117	117	117	117	117								
	V_2 ~ KIAS	126	126	125	125	125	124	124	124	123	123								
	TOFL(STANDING WATER) ~ FT	13562	13950	14259	14679	15100	15519	15965	16442	17016	17595								
	TOFL(SLUSH) ~ FT	12206	12556	12811	13200	13532	13937	14373	14809	15307	15814								
	TOFL(WET SNOW) ~ FT	10954	11219	11498	11856	12210	12574	12960	13375	13741	14409								
	TOFL(DRY SNOW) ~ FT	11052	11310	11584	11876	12171	12477	12796	13201	13620	14054								
22,000 lb 9979 kg	$V_1=V_R$ ~ KIAS	114	114	114	114	114	114	114	114	115	115	115							
	V_2 ~ KIAS	124	124	123	123	122	122	122	121	121	120	120							
	TOFL(STANDING WATER) ~ FT	12939	13302	13662	14000	14405	14714	15115	15617	16083	16637	17207							
	TOFL(SLUSH) ~ FT	11601	11876	12223	12599	12858	13232	13566	14040	14517	15018	15565							
	TOFL(WET SNOW) ~ FT	10498	10737	10994	11273	11547	11835	12223	12644	13037	13632	14142							
	TOFL(DRY SNOW) ~ FT	10604	10843	11097	11367	11639	11921	12215	12586	12987	13408	13865							
21,000 lb 9525 kg	$V_1=V_R$ ~ KIAS	111	111	111	111	112	112	112	112	112	112	112	112						
	V_2 ~ KIAS	122	121	121	121	120	120	120	119	119	118	118	117						
	TOFL(STANDING WATER) ~ FT	12220	12576	12928	13302	13597	13985	14382	14729	15153	15663	16183	16731						
	TOFL(SLUSH) ~ FT	11002	11263	11594	11880	12221	12520	12826	13200	13666	14090	14610							
	TOFL(WET SNOW) ~ FT	10044	10264	10498	10748	11003	11267	11541	11888	12227	12669	13076							
	TOFL(DRY SNOW) ~ FT	10153	10374	10608	10858	11109	11368	11637	11974	12339	12719	13131							
20,000 lb 9072 kg	$V_1=V_R$ ~ KIAS	109	109	109	109	109	109	109	109	109	109	109	109	110					
	V_2 ~ KIAS	120	119	119	119	118	118	118	117	117	116	116	115	115					
	TOFL(STANDING WATER) ~ FT	11607	11827	12152	12514	12838	13139	13509	13925	14322	14678	15148	15637	16243					
	TOFL(SLUSH) ~ FT	10341	10637	10881	11192	11466	11775	12071	12475	12847	13220	13609							
	TOFL(WET SNOW) ~ FT	9581	9782	9994	10222	10451	10687	10933	11245	11584	11931	12306							
	TOFL(DRY SNOW) ~ FT	9693	9895	10109	10336	10565	10801	11046	11351	11679	12019	12384							
19,000 lb 8618 kg	$V_1=V_R$ ~ KIAS	106	106	106	106	106	106	106	106	106	107	107	107	107	107				
	V_2 ~ KIAS	118	117	117	116	116	116	115	115	115	114	114	113	113	112				
	TOFL(STANDING WATER) ~ FT	11036	11216	11442	11756	12078	12342	12682	13076	13415	13843	14216	14736	15212	15684				
	TOFL(SLUSH) ~ FT	9858	9961	10260	10509	10802	11043	11352	11717	12060	12406	12820							
	TOFL(WET SNOW) ~ FT	9238	9333	9529	9734	9941	10155	10376	10652	10950	11256	11586							
	TOFL(DRY SNOW) ~ FT	9353	9449	9646	9851	10059	10273	10494	10768	11063	11364	11686							
18,000 lb 8165 kg	$V_1=V_R$ ~ KIAS	106	105	104	103	103	103	103	104	104	104	104	104	104	104				
	V_2 ~ KIAS	118	117	115	114	114	113	113	113	112	112	111	111	110	110				
	TOFL(STANDING WATER) ~ FT	10845	10908	10978	11079	11372	11679	11909	12285	12585	12973	13294	13753	14187	14733				
	TOFL(SLUSH) ~ FT	9712	9756	9814	9905	10139	10414	10667	10988	11282	11632	11958							
	TOFL(WET SNOW) ~ FT	9117	9164	9215	9298	9485	9681	9880	10126	10391	10659	10947							
	TOFL(DRY SNOW) ~ FT	9240	9286	9336	9419	9607	9803	10003	10248	10511	10775	11058							
17,000 lb 7711 kg	$V_1=V_R$ ~ KIAS	106	105	103	102	102	101	101	101	101	101	101	101	101	101				
	V_2 ~ KIAS	118	117	115	114	113	111	111	110	110	110	109	108	108	107				
	TOFL(STANDING WATER) ~ FT	10737	10776	10805	10860	10933	11002	11273	11523	11870	12151	12484	12837	13211	13689				
	TOFL(SLUSH) ~ FT	9643	9675	9669	9717	9765	9743	10018	10286	10602	10883	11146							
	TOFL(WET SNOW) ~ FT	9062	9085	9100	9140	9197	9251	9415	9638	9873	10107	10356							
	TOFL(DRY SNOW) ~ FT	9192	9214	9228	9267	9324	9377	9542	9764	9998	10230	10475							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACT0004C

Table 59

Flaps 15° Field Pressure Altitude (13,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	$V_1=V_R$ ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL(STANDING WATER) ~ FT																		
	TOFL(SLUSH) ~ FT																		
	TOFL(WET SNOW) ~ FT																		
	TOFL(DRY SNOW) ~ FT																		
27,000 lb 12,247 kg	$V_1=V_R$ ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL(STANDING WATER) ~ FT																		
	TOFL(SLUSH) ~ FT																		
	TOFL(WET SNOW) ~ FT																		
	TOFL(DRY SNOW) ~ FT																		
26,000 lb 11,793 kg	$V_1=V_R$ ~ KIAS	126	126	126															
	V_2 ~ KIAS	133	133	133															
	TOFL(STANDING WATER) ~ FT	17451	17971	18524															
	TOFL(SLUSH) ~ FT	15732	16237	16775															
	TOFL(WET SNOW) ~ FT	14293	14675	15180															
	TOFL(DRY SNOW) ~ FT	13851	14224	14627															
25,000 lb 11,340 kg	$V_1=V_R$ ~ KIAS	122	123	123	123	123													
	V_2 ~ KIAS	130	130	130	129	129													
	TOFL(STANDING WATER) ~ FT	16449	16933	17446	17991	18528													
	TOFL(SLUSH) ~ FT	14879	15270	15751	16255	16776													
	TOFL(WET SNOW) ~ FT	12764	13096	13463	13825	14264													
	TOFL(DRY SNOW) ~ FT	13147	13488	13857	14254	14651													
24,000 lb 10,886 kg	$V_1=V_R$ ~ KIAS	119	120	120	120	120	120												
	V_2 ~ KIAS	128	128	127	127	127	126												
	TOFL(STANDING WATER) ~ FT	15509	15960	16436	16941	17440	17958												
	TOFL(SLUSH) ~ FT	13973	14404	14788	15260	15746	16022												
	TOFL(WET SNOW) ~ FT	12253	12565	12899	13249	13648	14020												
	TOFL(DRY SNOW) ~ FT	12493	12806	13143	13506	13862	14121												
23,000 lb 10,433 kg	$V_1=V_R$ ~ KIAS	116	116	117	117	117	117	117	117										
	V_2 ~ KIAS	125	125	125	124	124	124	123	123										
	TOFL(STANDING WATER) ~ FT	14563	14980	15421	15886	16325	16801	17304	17864										
	TOFL(SLUSH) ~ FT	13082	13465	13887	14242	14687	15089	15596	16012										
	TOFL(WET SNOW) ~ FT	11742	12089	12446	12811	13191	13564	13884	14556										
	TOFL(DRY SNOW) ~ FT	11830	12115	12422	12751	13073	13410	13758	14144										
22,000 lb 9979 kg	$V_1=V_R$ ~ KIAS	114	114	114	114	114	114	114	114	115	115								
	V_2 ~ KIAS	123	123	123	122	122	121	121	121	120	120								
	TOFL(STANDING WATER) ~ FT	13978	14355	14611	15046	15477	15923	16371	16910	17485	18050								
	TOFL(SLUSH) ~ FT	12503	12861	13126	13529	13936	14277	14734	15162	15638	16193								
	TOFL(WET SNOW) ~ FT	11231	11502	11791	12098	12472	12846	13188	13773	14252	14771								
	TOFL(DRY SNOW) ~ FT	11336	11600	11884	12188	12486	12796	13128	13529	13957	14398								
21,000 lb 9525 kg	$V_1=V_R$ ~ KIAS	111	111	112	112	112	112	112	112	112	112	112							
	V_2 ~ KIAS	121	121	120	120	120	119	119	119	118	118	117							
	TOFL(STANDING WATER) ~ FT	13213	13582	13958	14304	14713	15027	15442	15940	16469	16986	17571							
	TOFL(SLUSH) ~ FT	11845	12126	12484	12865	13113	13510	13855	14324	14774	15324	15866							
	TOFL(WET SNOW) ~ FT	10727	10971	11237	11522	11800	12090	12452	12947	13399	13893	14362							
	TOFL(DRY SNOW) ~ FT	10841	11085	11347	11627	11900	12185	12488	12852	13255	13692	14159							
20,000 lb 9072 kg	$V_1=V_R$ ~ KIAS	109	109	109	109	109	109	109	109	109	109	109	109						
	V_2 ~ KIAS	119	119	118	118	118	117	117	117	116	116	115	115						
	TOFL(STANDING WATER) ~ FT	12425	12786	13146	13506	13822	14213	14602	14960	15384	15907	16437	16977						
	TOFL(SLUSH) ~ FT	11121	11433	11727	12080	12420	12720	13093	13382	13862	14282	14825							
	TOFL(WET SNOW) ~ FT	10217	10439	10678	10933	11184	11447	11731	12064	12438	12899	13300							
	TOFL(DRY SNOW) ~ FT	10334	10558	10797	11052	11301	11560	11836	12164	12526	12916	13332							
19,000 lb 8618 kg	$V_1=V_R$ ~ KIAS	106	106	106	106	106	106	106	106	106	107	107	107	107					
	V_2 ~ KIAS	117	116	116	116	115	115	115	114	114	114	113	113	112					
	TOFL(STANDING WATER) ~ FT	11699	12018	12365	12717	12982	13341	13713	14114	14516	14984	15292	15806	16430					
	TOFL(SLUSH) ~ FT	10494	10799	11058	11362	11635	11972	12311	12646	12999	13352	13792							
	TOFL(WET SNOW) ~ FT	9745	9947	10163	10394	10620	10855	11104	11402	11734	12094	12471							
	TOFL(DRY SNOW) ~ FT	9865	10069	10285	10517	10743	10978	11226	11521	11844	12191	12559							
18,000 lb 8165 kg	$V_1=V_R$ ~ KIAS	104	103	103	103	103	103	103	104	104	104	104	104	104					
	V_2 ~ KIAS	116	114	114	114	113	113	112	112	112	111	111	110	110					
	TOFL(STANDING WATER) ~ FT	11346	11421	11636	11961	12298	12543	12884	13255	13604	14024	14415	14901	15388					
	TOFL(SLUSH) ~ FT	10074	10137	10436	10663	10982	11225	11534	11867	12179	12498	12765							
	TOFL(WET SNOW) ~ FT	9460	9518	9703	9915	10119	10330	10553	10818	11109	11420	11749							
	TOFL(DRY SNOW) ~ FT	9586	9643	9829	10042	10247	10458	10681	10944	11232	11538	11861							
17,000 lb 7711 kg	$V_1=V_R$ ~ KIAS	104	103	102	101	101	101	101	101	101	101	101	101	101					
	V_2 ~ KIAS	115	114	113	112	111	111	110	110	109	109	108	108	107					
	TOFL(STANDING WATER) ~ FT	11095	11154	11235	11322	11552	11775	12105	12455	12747	13139	13463	13891	14324					
	TOFL(SLUSH) ~ FT	9933	9981	10053	10131	10264	10574	10786	11138	11411	11716	11873							
	TOFL(WET SNOW) ~ FT	9347	9390	9454	9523	9650	9842	10042	10276	10533	10805	11092							
	TOFL(DRY SNOW) ~ FT	9480	9523	9586	9655	9781	9975	10175	10409	10663	10933	11214							

STANDING WATER,
SLUSH, WET SNOW,
AND DRY SNOW
RUNWAY
CONDITIONS

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Table 60

Flaps 15° Field Pressure Altitude (14,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	$V_1=V_R$ ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL (STANDING WATER) ~ FT																		
	TOFL (SLUSH) ~ FT																		
	TOFL (WET SNOW) ~ FT																		
	TOFL (DRY SNOW) ~ FT																		
27,000 lb 12,247 kg	$V_1=V_R$ ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL (STANDING WATER) ~ FT																		
	TOFL (SLUSH) ~ FT																		
	TOFL (WET SNOW) ~ FT																		
	TOFL (DRY SNOW) ~ FT																		
26,000 lb 11,793 kg	$V_1=V_R$ ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL (STANDING WATER) ~ FT																		
	TOFL (SLUSH) ~ FT																		
	TOFL (WET SNOW) ~ FT																		
	TOFL (DRY SNOW) ~ FT																		
25,000 lb 11,340 kg	$V_1=V_R$ ~ KIAS	123	123	123															
	V_2 ~ KIAS	130	130	130															
	TOFL (STANDING WATER) ~ FT	17880	18417	18985															
	TOFL (SLUSH) ~ FT	16080	16567	17119															
	TOFL (WET SNOW) ~ FT	14503	14981	15472															
	TOFL (DRY SNOW) ~ FT	14147	14525	14939															
24,000 lb 10,886 kg	$V_1=V_R$ ~ KIAS	120	120	120	120	120													
	V_2 ~ KIAS	127	127	127	126	126													
	TOFL (STANDING WATER) ~ FT	16788	17280	17807	18357	18902													
	TOFL (SLUSH) ~ FT	15167	15558	16070	16394	16895													
	TOFL (WET SNOW) ~ FT	13175	13501	13927	14313	14534													
	TOFL (DRY SNOW) ~ FT	13423	13769	14147	14428	14805													
23,000 lb 10,433 kg	$V_1=V_R$ ~ KIAS	116	117	117	117	117	117	117											
	V_2 ~ KIAS	125	124	124	124	124	123	123											
	TOFL (STANDING WATER) ~ FT	15755	16211	16696	17202	17681	18193	18770											
	TOFL (SLUSH) ~ FT	14186	14545	14995	15428	15884	16344	16911											
	TOFL (WET SNOW) ~ FT	12380	12799	13253	13697	14079	14786	15313											
	TOFL (DRY SNOW) ~ FT	12691	13006	13348	13709	14065	14433	14818											
22,000 lb 9979 kg	$V_1=V_R$ ~ KIAS	114	114	114	114	114	114	114	115										
	V_2 ~ KIAS	123	122	122	122	121	121	121	120										
	TOFL (STANDING WATER) ~ FT	15001	15416	15813	16285	16755	17245	17747	18423										
	TOFL (SLUSH) ~ FT	13412	13804	14238	14616	15051	15474	15981	16592										
	TOFL (WET SNOW) ~ FT	12049	12342	12657	12971	13243	13733	14108	15010										
	TOFL (DRY SNOW) ~ FT	12145	12436	12752	13085	13413	13758	14135	14651										
21,000 lb 9525 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112								
	V_2 ~ KIAS	120	120	120	119	119	119	118	118	118	117								
	TOFL (STANDING WATER) ~ FT	14285	14674	15105	15375	15812	16267	16732	17295	17895	18521								
	TOFL (SLUSH) ~ FT	12759	13143	13415	13822	14229	14581	15053	15500	15961	16521								
	TOFL (WET SNOW) ~ FT	11486	11763	12054	12367	12722	13191	13608	13968	14323	15051								
	TOFL (DRY SNOW) ~ FT	11600	11869	12159	12465	12765	13081	13426	13844	14297	14736								
20,000 lb 9072 kg	$V_1=V_R$ ~ KIAS	109	109	109	109	109	109	109	109	109	109	110							
	V_2 ~ KIAS	118	118	118	117	117	117	117	116	116	115	115							
	TOFL (STANDING WATER) ~ FT	13441	13818	14199	14545	14957	15278	15705	16221	16760	17268	17852							
	TOFL (SLUSH) ~ FT	12050	12335	12694	13014	13329	13699	14066	14565	15004	15568	16001							
	TOFL (WET SNOW) ~ FT	10919	11165	11430	11718	11996	12289	12605	13009	13464	14103	14575							
	TOFL (DRY SNOW) ~ FT	11041	11288	11553	11831	12105	12392	12705	13081	13488	13916	14378							
19,000 lb 8618 kg	$V_1=V_R$ ~ KIAS	106	106	106	106	106	106	106	106	107	107	107	107	107					
	V_2 ~ KIAS	116	116	115	115	115	114	114	114	114	113	113	112	112					
	TOFL (STANDING WATER) ~ FT	12650	12995	13345	13658	14037	14432	14831	15308	15531	16125	16671	17193	17833					
	TOFL (SLUSH) ~ FT	11310	11620	11895	12235	12536	12895	13216	13595	14032	14487	14924							
	TOFL (WET SNOW) ~ FT	10397	10620	10860	11113	11361	11622	11914	12259	12634	13103	13496							
	TOFL (DRY SNOW) ~ FT	10523	10747	10988	11241	11489	11749	12031	12369	12732	13111	13519							
18,000 lb 8165 kg	$V_1=V_R$ ~ KIAS	103	103	103	103	103	103	104	104	104	104	104	104	104					
	V_2 ~ KIAS	114	114	113	113	113	112	112	112	111	111	110	110	109					
	TOFL (STANDING WATER) ~ FT	11907	12231	12582	12916	13196	13557	13920	14289	14753	15211	15646	16020	16598					
	TOFL (SLUSH) ~ FT	10679	10917	11238	11495	11810	12148	12468	12829	13209	13591	13977							
	TOFL (WET SNOW) ~ FT	9931	10137	10354	10581	10805	11039	11293	11599	11929	12271	12644							
	TOFL (DRY SNOW) ~ FT	10061	10268	10486	10714	10938	11173	11426	11729	12052	12386	12743							
17,000 lb 7711 kg	$V_1=V_R$ ~ KIAS	102	101	101	101	101	101	101	101	101	101	101	101	101					
	V_2 ~ KIAS	113	112	111	111	110	110	110	109	109	108	108	107	106					
	TOFL (STANDING WATER) ~ FT	11628	11712	11829	12148	12402	12733	13081	13392	13810	14218	14597	15065	15534					
	TOFL (SLUSH) ~ FT	10342	10415	10517	10835	11066	11330	11636	12002	12376	12730	13073							
	TOFL (WET SNOW) ~ FT	9721	9786	9880	10085	10289	10499	10726	10997	11286	11584	11901							
	TOFL (DRY SNOW) ~ FT	9858	9923	10016	10222	10428	10638	10885	11136	11421	11715	12026							

STANDING WATER,
SLUSH, WET SNOW,
AND DRY SNOW
RUNWAY
CONDITIONS

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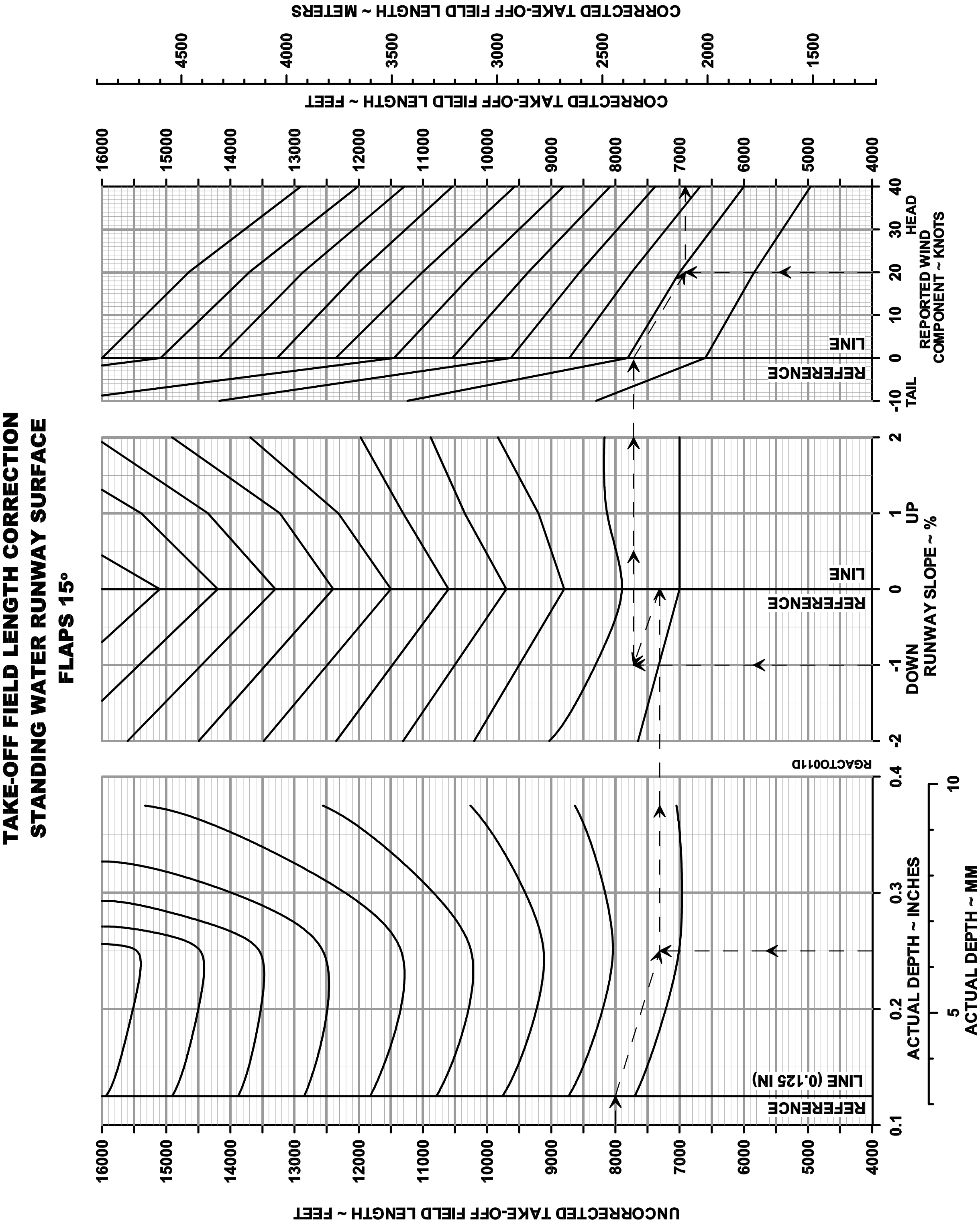
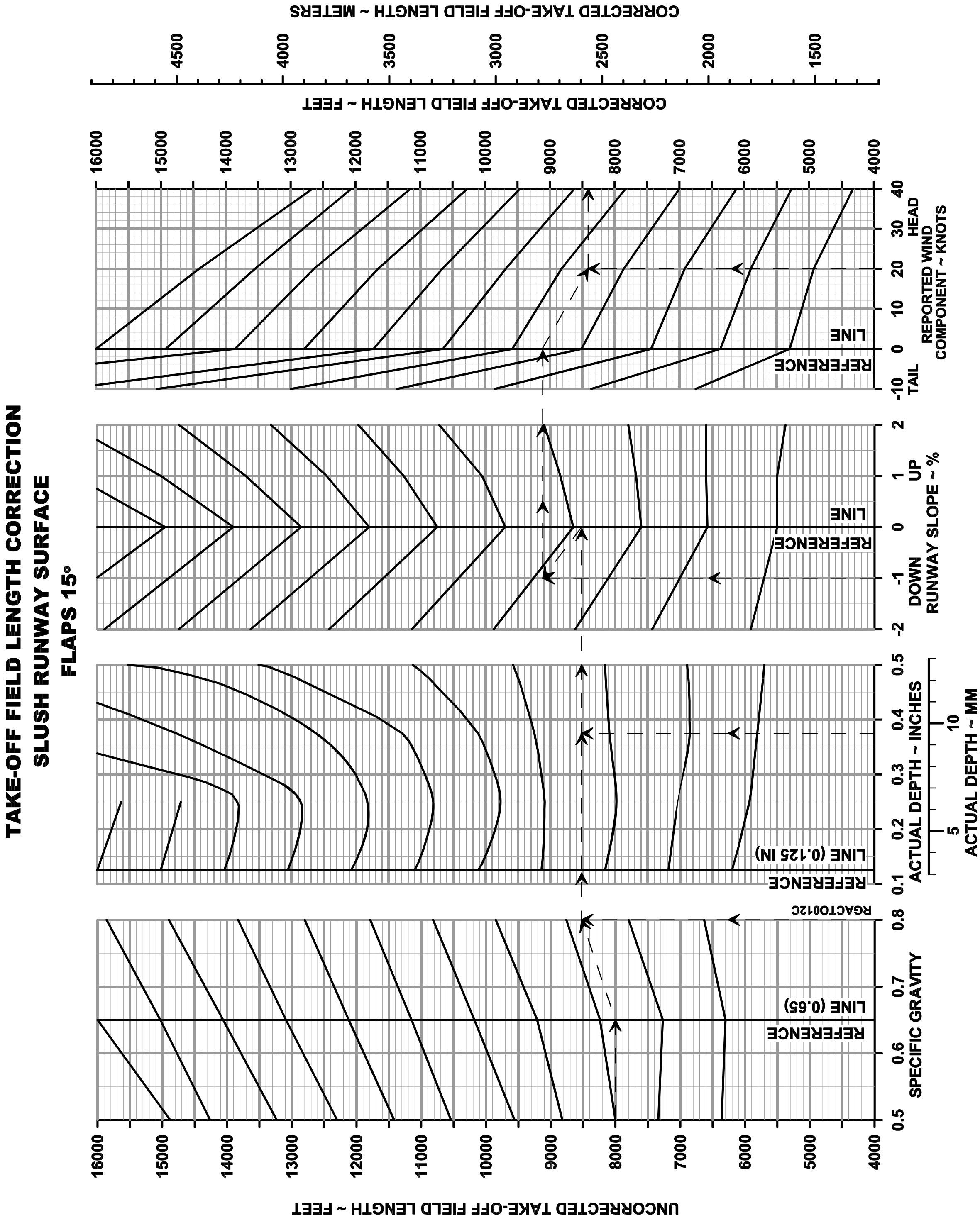


Take-Off Field Length - Standing Water Runway (Flaps 15°)

Corrected for Runway Gradient

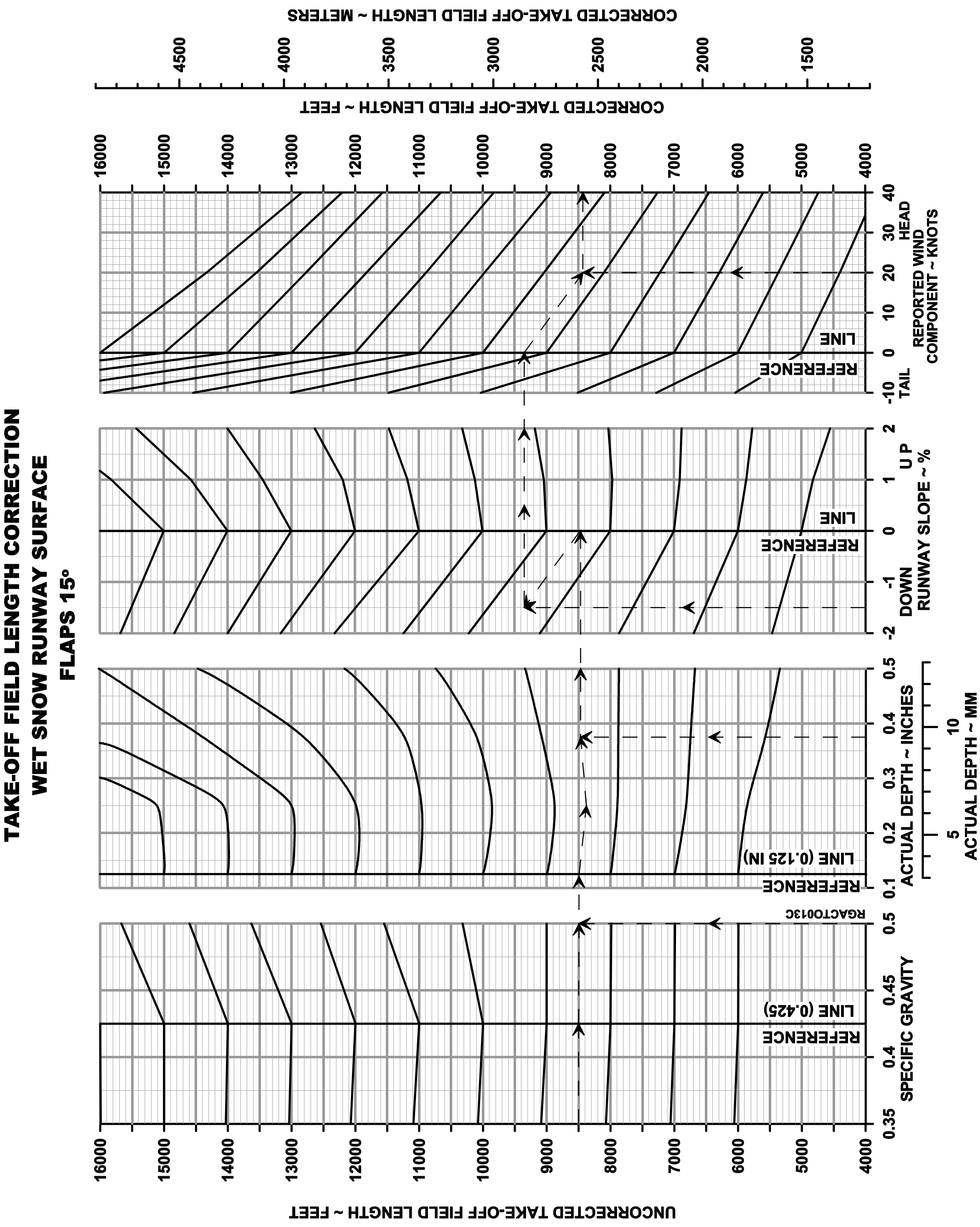
Figure 8



Take-Off Field Length - Slush Runway (Flaps 15°)

Corrected for Runway Gradient

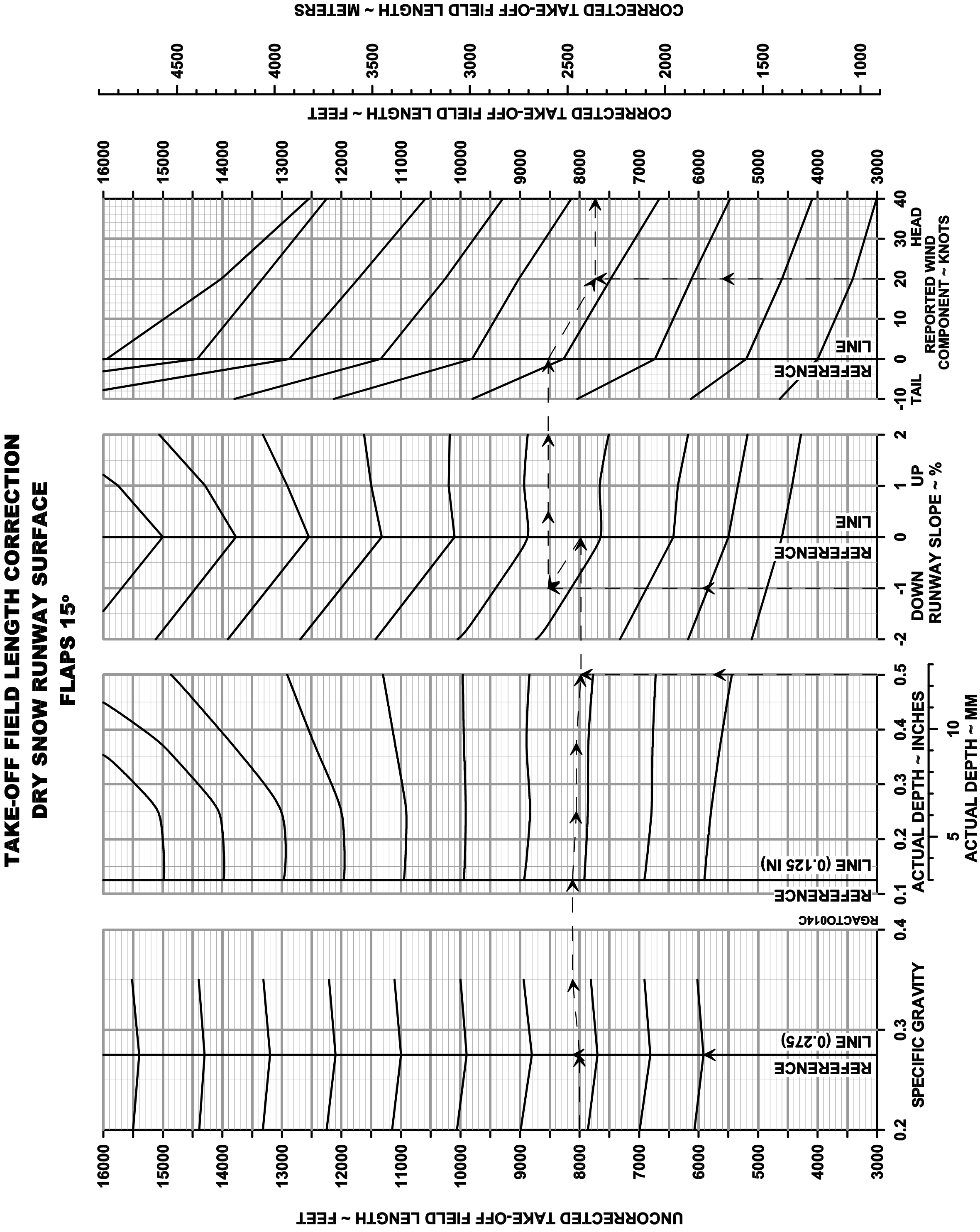
Figure 9



Take-Off Field Length - Wet Snow Runway (Flaps 15°)

Corrected for Runway Gradient

Figure 10



Take-Off Field Length - Dry Snow Runway (Flaps 15°)

Corrected for Runway Gradient

Figure 11

LANDING DISTANCE

Associated Conditions

Engines	*Thrust levers closed at 50 feet*
Flaps	*45 °*
Landing Gear	*Down*
Lift Dump	*Selected after touchdown*
Wheel Brakes	*Normal system selected*
Airspeed	V_{REF} *at 50 feet*

NOTE: The wind grid is factored in such a way that the effect of not more than 50% of headwinds and not less than 150% of tailwinds is obtained. Reported winds may therefore be used directly in the grids but, when a landing is to be made into a headwind greater than 40 knots, the performance appropriate to a headwind of 40 knots is to be obtained from the chart.

Figure 12 shows the unfactored (gross) landing distance required from 50 feet (15.24 m) to stop on a wet surface as well as surfaces covered by compacted snow.

Figures 13 through 16 give unfactored (gross) landing distances on a contaminated runway. They are used in the same way as Figure 12 except that a correction grid for depth of contaminant is provided. No correction for density of contaminant is required since the scheduled data is based on the most conservative density for the range of densities established for the contaminant.

In using this information, obtain the landing distance required for the intended landing weight and compare it with the runway length available. It is then necessary to decide whether the safety margin is adequate, taking into account the weather, operational field length factors and the possible consequence of an overrun or of an undershoot caused by attempts to touchdown early.

Instructions For Use Of Charts

The broken arrow line illustrates the use of the chart.

- Enter the chart with air temperature and move up to the appropriate airfield altitude.
- Move horizontally to the weight grid reference line and follow the guidelines to the required weight.
- Continue horizontally to correct for known surface conditions, reported wind component, runway slope and threshold speed.

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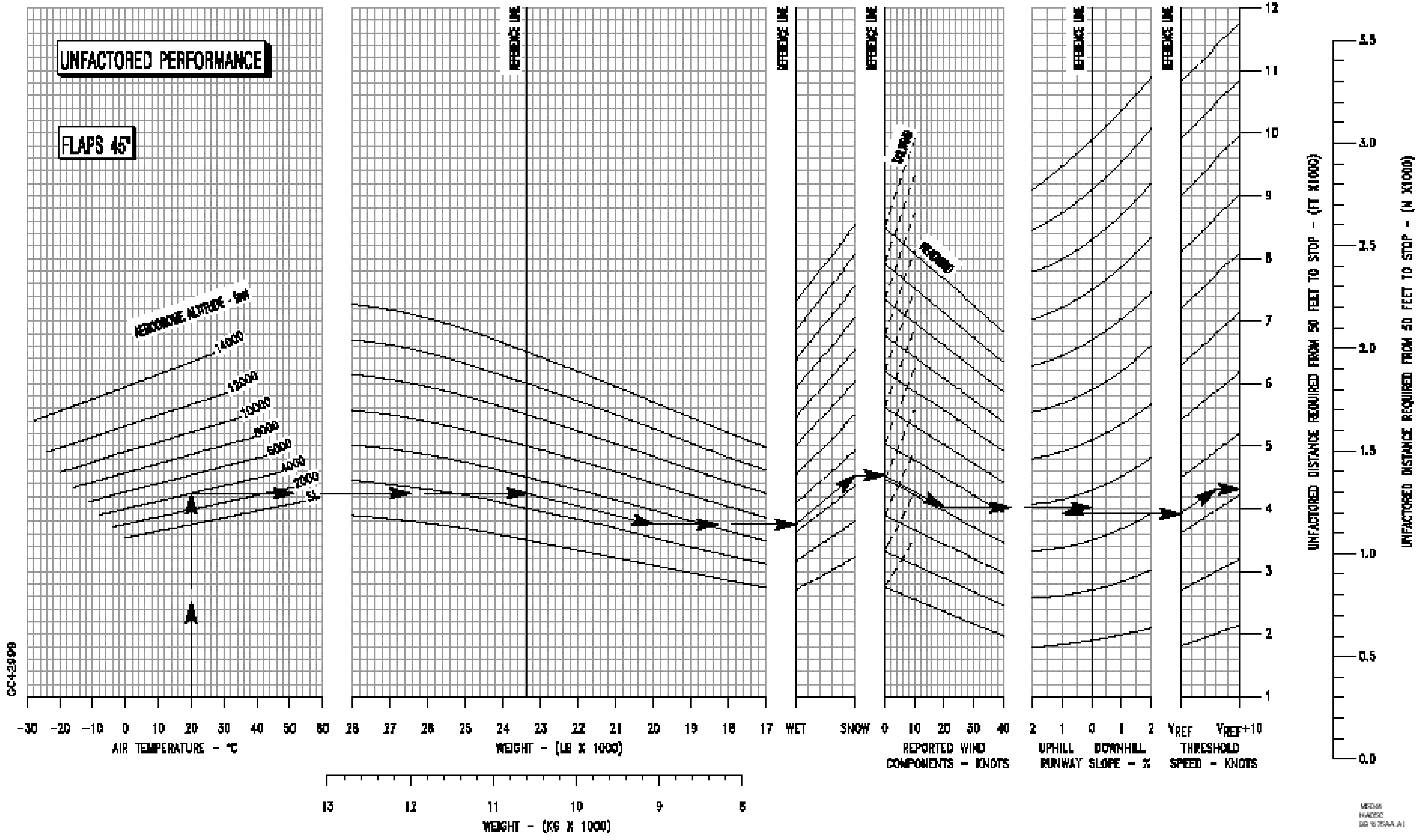
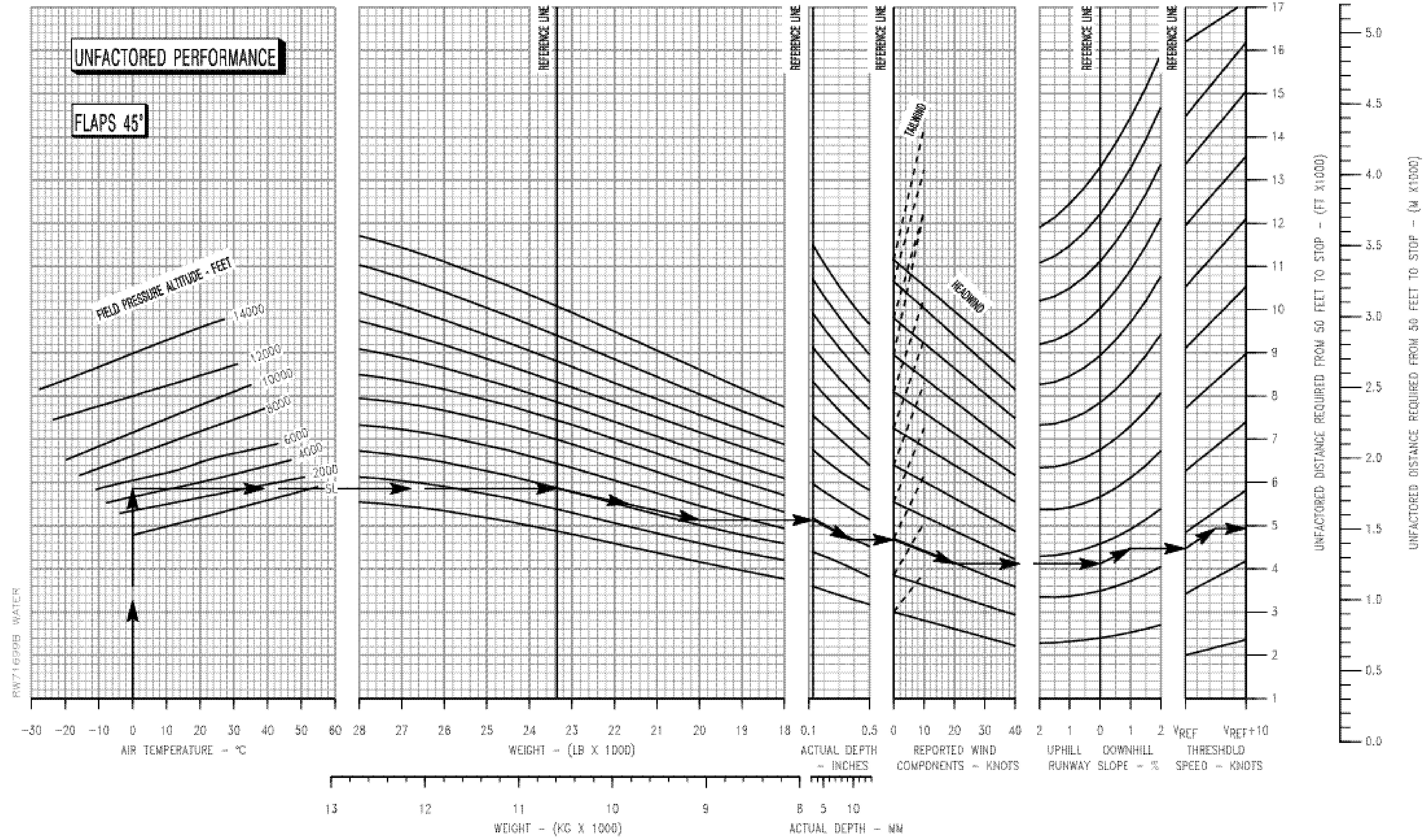
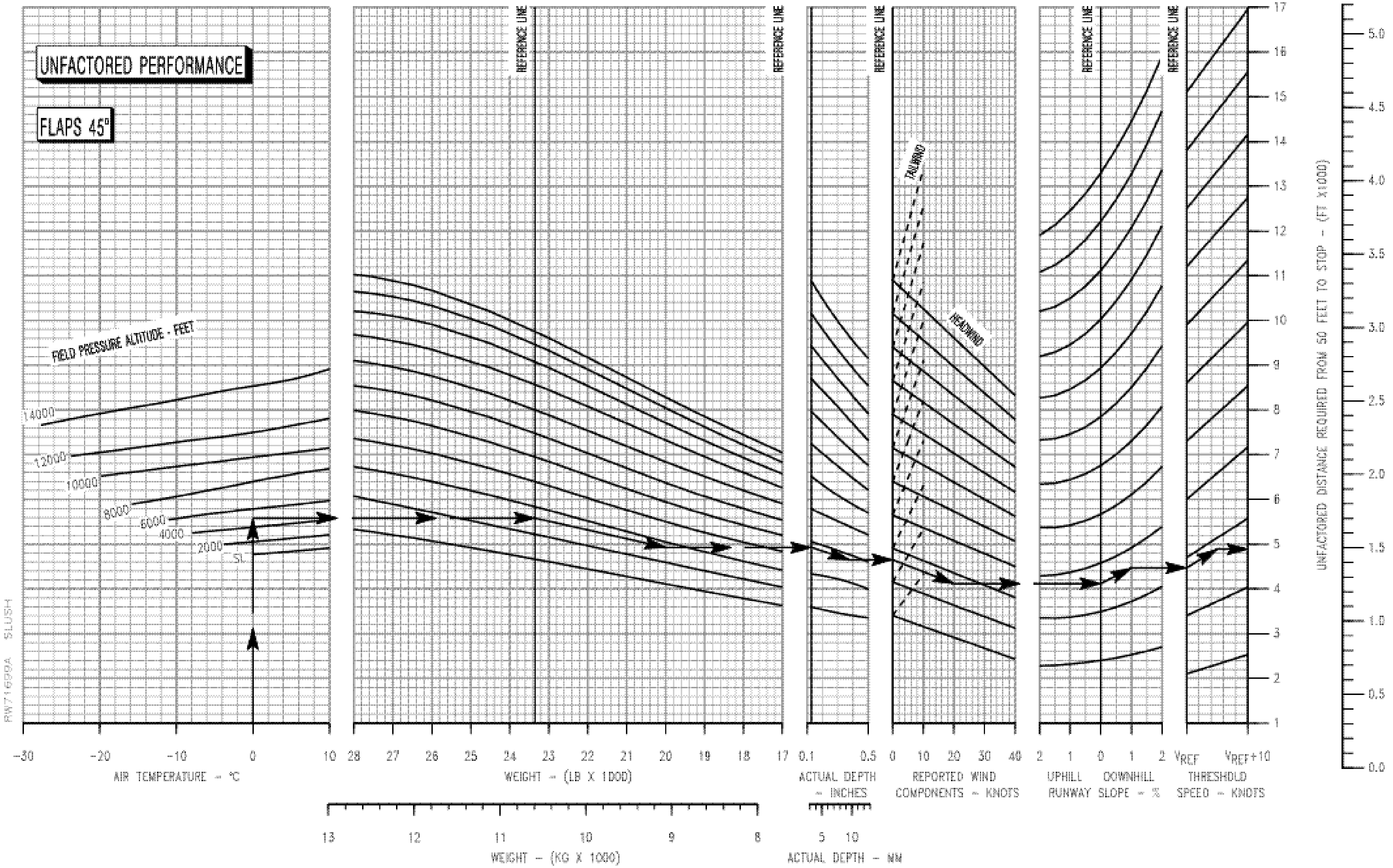


Landing Distance on Wet Runway or Compacted Snow

Figure 12

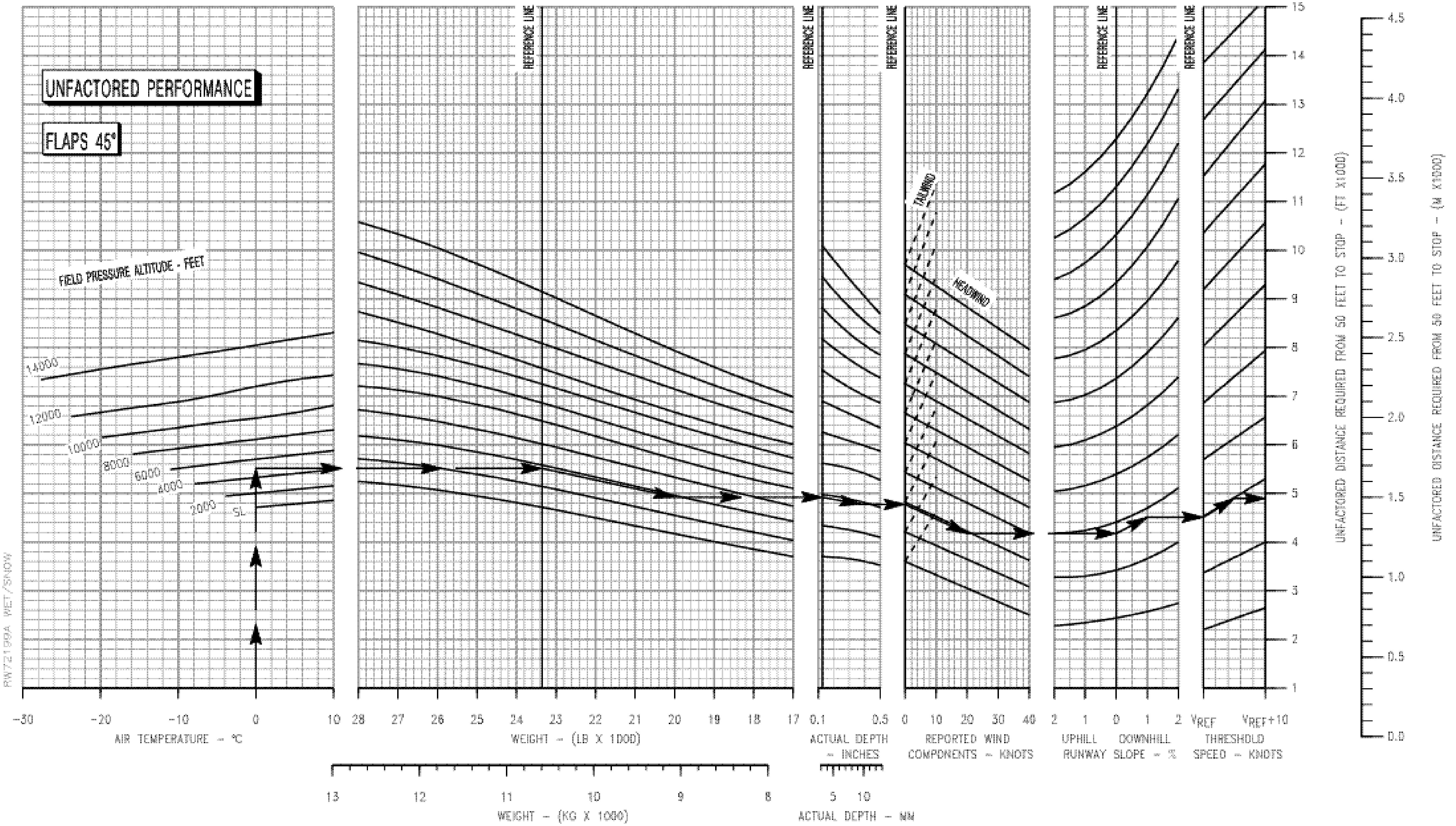


Landing Distance - Standing Water

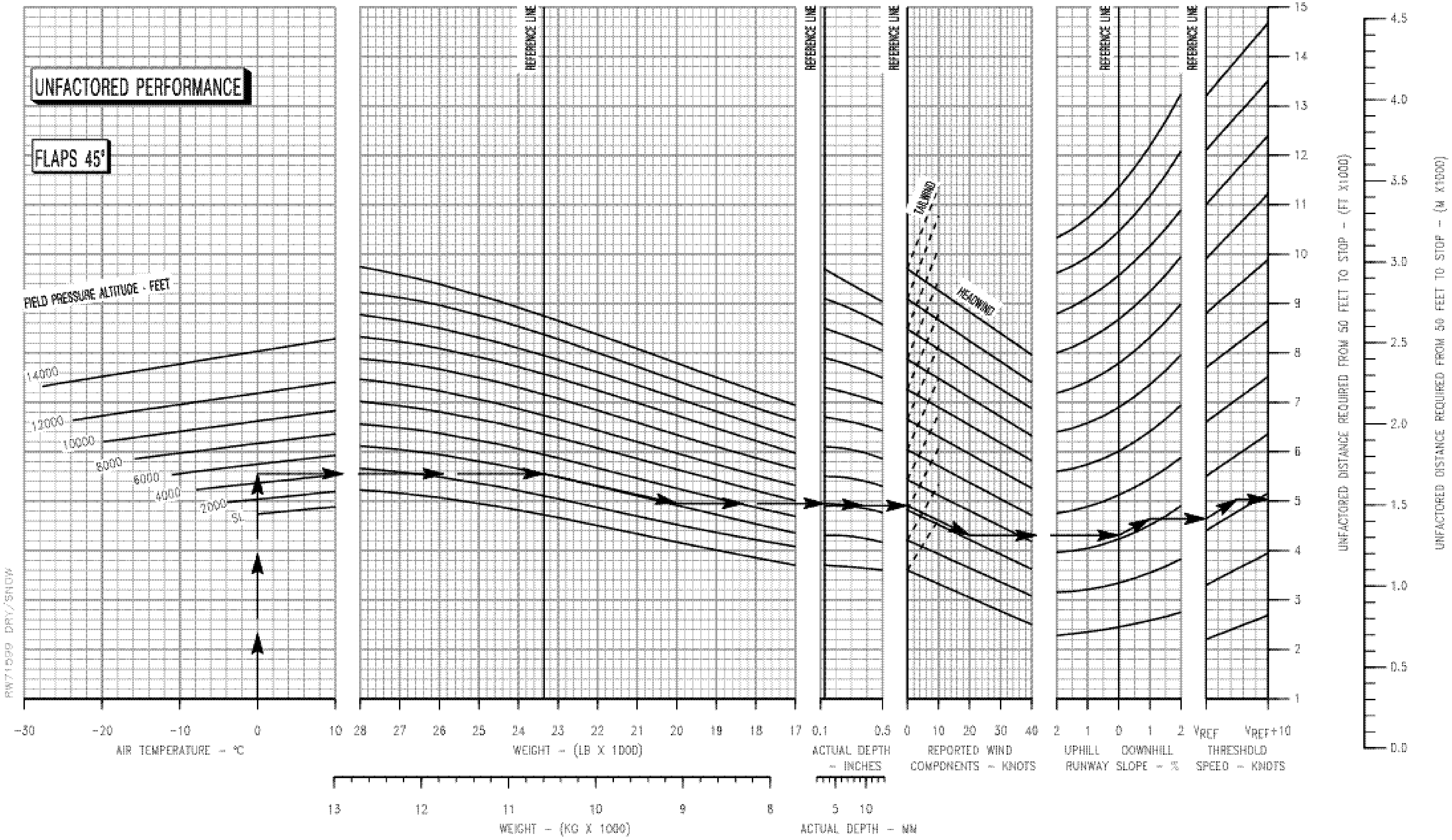


Landing Distance - Slush

Figure 14



Landing Distance - Wet Snow



Landing Distance - Dry Snow

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INSTRUCTION SHEET

FAA Approved Airplane Flight Manual Supplement
P/N 140-590032-0039
for
Airplanes Operating on the Brazilian Register

Original Issue: July 21, 2008

This Supplement is Applicable to the Following Airplane Flight Manual:
P/N 140-590032-0005

INSTRUCTIONS

1. Insert the Brazilian AFM Title and Logo pages immediately in front of the existing Airplane Flight Manual Title page, P/N 140-590032-0005.

2. Turn to SECTION - 7 SUPPLEMENTS and compare the date of the existing LOG OF SUPPLEMENTS page with the date of the enclosed LOG OF SUPPLEMENTS page.

   Retain the LOG OF SUPPLEMENTS page which has the later date and discard the older LOG OF SUPPLEMENTS page. The latest LOG OF SUPPLEMENTS can be printed by using the HBC website at: http://www.hawkerbeechcraft.com/service_support/pubs/docs/nontechnical/140-590032-0005-los.pdf

3. Arrange the Supplements in SECTION - 7 SUPPLEMENTS in the order shown on the LOG OF SUPPLEMENTS page and place this supplement, P/N 140-590032-0039, dated Jul 21, 2008 Original Issue, Pages 1 thru 8 in the position indicated on the LOG OF SUPPLEMENTS page.

4. After compliance with these instructions, this Instruction Sheet may be discarded.

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Hawker Beechcraft

Hawker 800XP
Pro Line 21

ANAC Approved
Brazilian Airplane Flight Manual

for

Airplanes Operating on the Brazilian Register

The FAA Approved Airplane Flight Manual, P/N 140-590032-0005, is approved by the Federal Aviation Administration (FAA) on behalf of the Agencia Nacional De Aviação Civil (ANAC) in accordance with the Regulamentos Brasileiros de Homologacão Aeronáutica (RBHA) 21, Section 21.29, for Brazilian registered airplanes.

Airplane Serial Number:..

Airplane Registration Number:..

Approved By:...

for Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

On Behalf of ANAC of Brazil

Approval Date: 7/21/08

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NOTE: If this airplane is removed from the Brazilian Registry, the Brazilian AFM Title and Logo pages and the ANAC Approved Airplane Flight Manual Supplement P/N 140-590032-0039, must be removed from this Airplane Flight Manual P/N 140-590032-0005.

Published By

Hawker Beechcraft Corporation
P.O. Box 85
Wichita, Kansas 67201
U.S.A.

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Hawker Beechcraft

Hawker 800XP
Pro Line 21

FAA Approved
Airplane Flight Manual Supplement
P/N 140-590032-0039

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL
P/N 140-590032-0005
for
Airplanes Operating on the Brazilian Register

Airplane Serial Number:..

Airplane Registration Number:...

Approved By:..

Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

On Behalf of ANAC of Brazil

Approval Date: 7/21/08

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LIST OF EFFECTIVE PAGES

Supplement Status	Date
Original Issue	Jul 21, 2008

Use the List Of Effective Pages to determine the current status of this supplement.

Page Number (s)	Page Status	Revision Number
Brazilian AFM Title Page	Original Issue	0
Brazilian AFM Logo Page	Original Issue	0
1 of 8	Original Issue	0
2 of 8	Original Issue	0
3 of 8	Original Issue	0
4 of 8	Original Issue	0
5 of 8	Original Issue	0
6 of 8	Original Issue	0
7 of 8	Original Issue	0
8 of 8	Original Issue	0

LOG OF REVISIONS

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
0	1 thru 8	Original Issue	7/21/08	DM Ba

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INTRODUCTION

When this airplane is registered in Brazil, this supplement must be incorporated into the Hawker 800XP Pro Line 21 Airplane Flight Manual, P/N 140-590032-0005, Section 7. Brazilian AFM Title and Logo pages must be inserted immediately in front of the existing AFM title page, P/N 140-590032-0005, and remain in this AFM at all times while this airplane is registered in Brazil.

This supplement, together with the FAA Approved Airplane Flight Manual, constitute the Brazilian Approved Airplane Flight Manual.

NOTE: If this airplane is removed from the Brazilian Registry, this Airplane Flight Manual Supplement, P/N 140-590032-0039, including the Brazilian AFM Title and Logo pages, must be removed from this Airplane Flight Manual, P/N 140-590032-0005.

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable except where superseded by the information given in this supplement.

SECTION 1 - GENERAL

No Change.

SECTION 2 - LIMITATIONS

No Change.

SECTION 3 - EMERGENCY PROCEDURES

No Change.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

LANDING with ASYMMETRIC AIR BRAKE

In the event of suspected air brake asymmetry in flight during air brake operations, select air brake to SHUT. Further use of the air brakes should not be attempted until after touchdown.

If an air brake fails to retract, further selection of the lever should be avoided to prevent possible resultant damage.

For landing with an asymmetric air brake, the subsequent landing should be made as a no-flap landing, using the techniques and airspeeds provided in the AFM Sub-section 4.05 ABNORMAL PROCEDURES (FLIGHT CONTROLS) for LANDING WITH ASYMMETRIC AIR BRAKE.

The use of flaps is not recommended, as large aileron angles will be necessary at low airspeed with flaps lowered.

Sub-section 4.10 - NORMAL PROCEDURES

BEFORE TAKE-OFF CHECKS

Whether in icing conditions or not, the SCREEN HEAT L and R and the PITOT/VANE HEAT L and R should be selected ON.

The ICE DET switch should normally be set to AUTO but, before taxiing in icing conditions, it should be set to OVRD.

SECTION 5 - PERFORMANCE

Sub-section 5.05 - GENERAL

In addition to the data provided in the AFM Sub-section 5.05 CONVERSION FACTORS table, the following graph is provided:

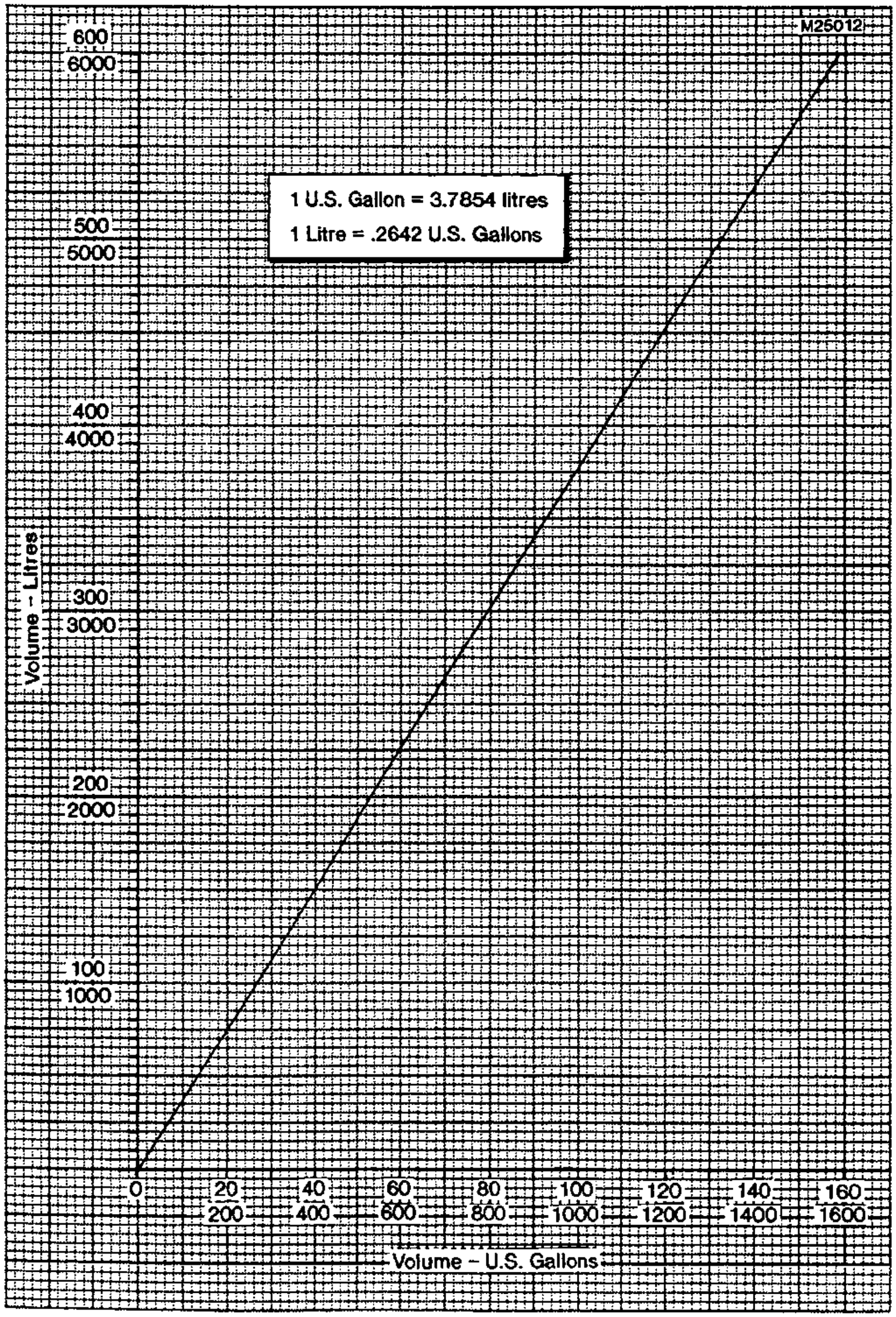

Figure 1
U.S. Gallons - Litres Conversion

SECTION 6 - WEIGHT & BALANCE

No Change.

Beechcraft®

Hawker 800XP

APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0043

for

CAT II OPERATION (CS-AWO Subpart 2)

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL
P/N 140-590032-0005
for
Airplanes Registered in the European Union member
states and other states associated with EASA

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: .....R. C. Shields.......

Randolph Shields, ODA Lead administrator
Beechcraft Corporation
ODA-230339-CE

This FAA approved Airplane Flight Manual Supplement is approved by the U.S. Federal Aviation Administration (FAA) on behalf of the European Aviation Safety Agency (EASA), using the bilateral arrangements between the FAA and the applicable European Union (EU) Member State and in accordance with European Commission Regulation 1702/2003. This supplement was prepared in accordance with European requirements.

Approval Date: ....11/7/13..............................

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APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0043
for
CAT II OPERATION (CS-AWO Subpart 2)

Supplement Status	Date
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APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0043
for
CAT II OPERATION (CS-AWO Subpart 2)

LOG OF REVISIONS

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INTRODUCTION

This supplement contains CAT II information (CS-AWO Subpart 2) prepared by Beechcraft Corporation and approved by the FAA on behalf of the European Aviation Safety Agency (EASA). This supplement applies only to the Hawker 800XP Pro Line 21 avionics airplanes registered in the European Union member states and other states associated with the European Aviation Safety Agency (EASA).

The limitations, procedures and information contained in other sections of the Airplane Flight Manual are applicable except where superseded by the information listed in this supplement.

SECTION 1 - GENERAL

No change.

SECTION 2 - LIMITATIONS

AVIONICS LIMITATIONS

Operational approval must be obtained from the local aviation authority before conducting CAT II approaches.

WAT limit requires a 2.5% approach climb gradient per Figure 1, SECTION 5 - PERFORMANCE of this supplement.

Table 1
Required Equipment for CAT II Operation (CS-AWO Subpart 2)

EQUIPMENT	CAT I	CAT II
Autopilot (AFCS)	0	2
FD Display	0	2
PFD	1	2
ILS Localizer/Glideslope Receivers	1	2
AHRS	1	2
Beam Deviation Indication and Alert	0	2
Radio Altimeter	0	1 Displayed on both PFDs
AFCS Mode Annunciation	1	2
Electrical Power Generator Source	0	1
Flap Configuration	Any	45°
Engines	1 or 2	2
DH Indication	None, barometric value	Clear visual indication based on radar height
Missed Approach Guidance	None	None

SECTION 3 - EMERGENCY PROCEDURES

No change.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

SUB-SECTION 4.05 - ABNORMAL PROCEDURES

AVIONICS

AVIONICS SYSTEMS

CAT II Malfunctions

Discontinue the CAT II approach if Excessive Beam Deviation Indication appears in LOC or GS.

SUB-SECTION 4.10 - NORMAL PROCEDURES

CAT II CHECKS

1. Establish landing configuration and stabilized approach airspeed.

   NOTE: CAT II status will not be displayed if the approach setups are not accomplished (refer to AFM Sub-section 4.10 NORMAL PROCEDURES - CAT II CHECKS).

   If one or more of the approach setup conditions become invalid, the green CAT II annunciation will change to amber.

2. At 50 ft above Decision Height, check that the DH window is displayed on both PFDs.
3. At Decision Height (DH displayed in the DH window) and, if visual reference is established, disconnect the autopilot by 80 ft RA and continue to land.
4. If visual reference is not established, execute MISSED APPROACH CHECKS (refer to AFM Sub-section 4.10 NORMAL PROCEDURES).

SECTION 5 - PERFORMANCE

SUB-SECTION 5.45 - LANDING WAT DATA

MAXIMUM LANDING WEIGHT FOR ALTITUDE AND TEMPERATURE

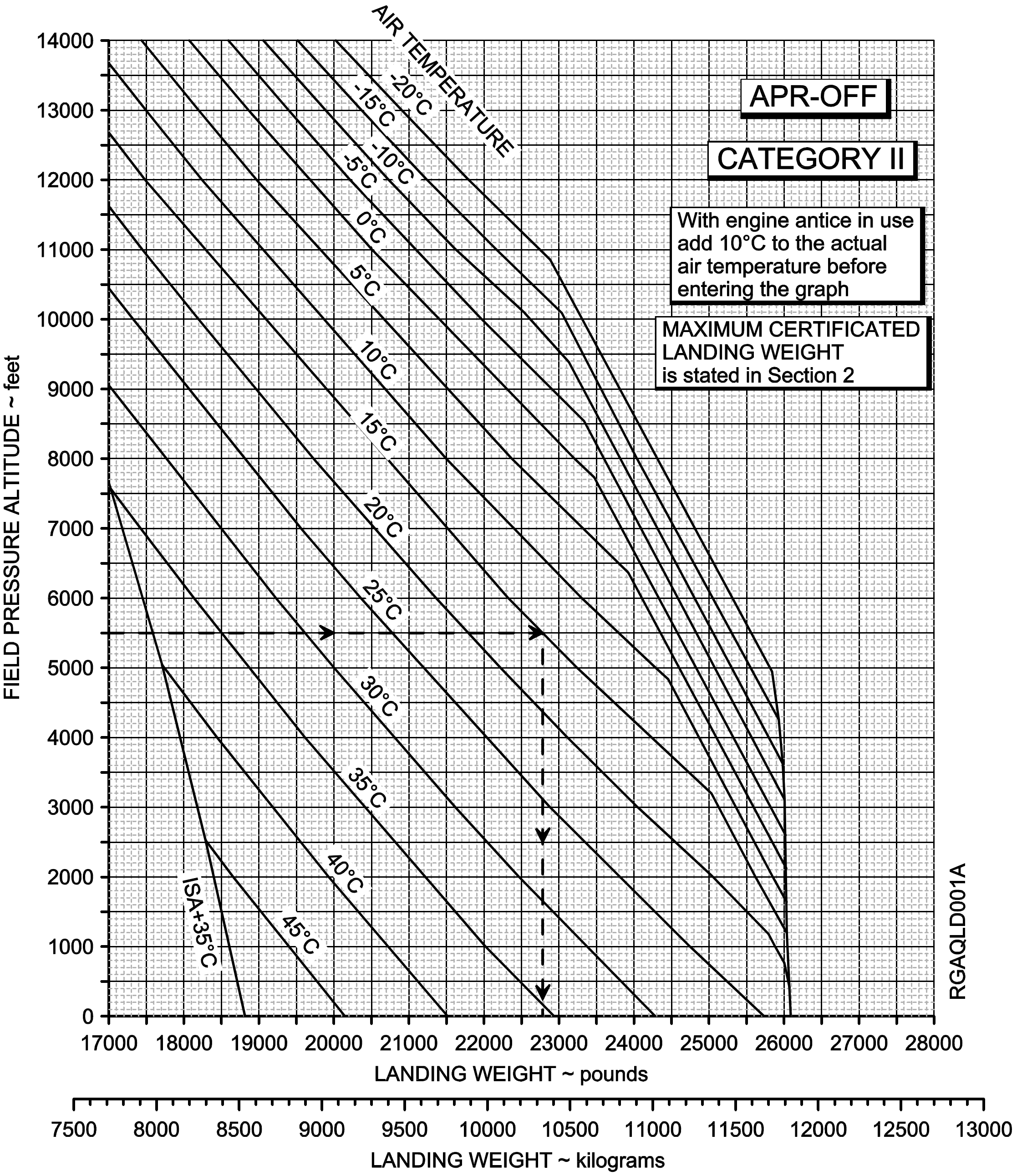

Figure 1
Maximum Landing Weight for Altitude and Temperature

SECTION 6 - WEIGHT & BALANCE

No change.

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0045
for
Airplanes Registered in Israel

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL P/N 140-590032-0005

Airplane Flight Manual Supplement is approved by the U. S. Federal Aviation Administration (FAA) on behalf of the Civil Aviation Administration of Israel (CAAI), in accordance with the Israel: Air Navigation Regulations (ANR), for Israeli registered airplanes.

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: ......Kevin D. Campbell......................

for Gerald M. Baker, Acting Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

On Behalf of Civil Aviation Administration of Israel (CAAI)

Approval Date: ....12/1/04..................................

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0045
for
Airplanes Registered in Israel

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INTRODUCTION

When this airplane is registered in Israel, this supplement must be incorporated into the Hawker 800XP Airplane Flight Manual P/N 140-590032-0005, Section 7.

Israeli AFM Title and Logo pages P/N 140-590032-0045 must be inserted immediately in front of the existing AFM title page P/N 140-590032-0005 and remain in this AFM at all times while this airplane is registered in Israel.

> *NOTE: If this airplane is removed from the Israeli Registry, this Airplane Flight Manual Supplement P/N 140-590032-0045, including the Title and Logo pages, must be removed from this Airplane Flight Manual P/N 140-590032-0005.*

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable except where superseded by the information given in this supplement.

SECTION 1 - GENERAL

No Change

SECTION 2 - LIMITATIONS

ENGINE LIMITATIONS

Automatic Performance Reserve (APR)

An aircraft maintenance log entry is required each time the APR system operates and allows engine parameters to exceed Initial Maximum Take-Off Thrust (APR Not Operating) limitations.

APR operations during APR ground tests and during normal approach and landing operations that does not exceed an engine limit, does not require recording.

MISCELLANEOUS LIMITATIONS

Auxiliary Power Unit (APU)

Limitations for the Auxiliary Power Unit are listed in Section 7 - SUPPLEMENTS of the Airplane Flight Manual, reference Supplement P/N 140-590032-0015.

SECTION 3 - EMERGENCY PROCEDURES

No Change

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

THRUST REVERSERS

UNLOCK and/or ARM INDICATIONS IN FLIGHT

UNLCK **and/or** **ARM**

Associated THRUST REVERSER
POWER switch ....OFF

NOTE: If REVRS annunciator is illuminated and/or in-flight deployment of thrust reverser is suspected refer to ***INADVERTENT THRUST REVERSER DEPLOYMENT IN FLIGHT*** *procedure - EMERGENCY PROCEDURES - Section 3.*

Continued Next Page →

THRUST REVERSERS (continued)

REVERSE INDICATION IN FLIGHT

REVRS

*NOTE: If REVRS annunciator is illuminated and/or in-flight deployment of thrust reverser is suspected refer to I**NADVERTENT THRUST REVERSER DEPLOYMENT IN FLIGHT** procedure - EMERGENCY PROCEDURES - Section 3.*

LANDING WITH ONE THRUST REVERSER DEPLOYED

Final Approach

Airspeed	150 KIAS maximum
Landing Gear	Down
FLAP OVRD	Select
FLAPS	Up
Rudder Trim	Neutral position (hold rudder pedal loads)

At Landing Threshold

Airspeed	V_{REF} +15 KIAS (not above 150 KIAS)

After Touchdown

Airbrakes	OPEN - Lift Dump not available
Wheel Brakes	As required
Thrust Reverser (operating engine)	As required
Reverse Thrust (operating engine)	As required

NOTE: Landing Distance will increase by approximately 24% above the landing distance with FLAPS 45 °.

Sub-section 4.10 - NORMAL PROCEDURES

No Change

SECTION 5 - PERFORMANCE

No Change

SECTION 6 - WEIGHT & BALANCE

No Change

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0047
for
TURBINE VIBRATION INDICATION SYSTEM

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL

P/N 140-590032-0005

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: Gerald M Baker ....

Gerald M. Baker, Acting Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 12/21/04 ....

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0047
for
TURBINE VIBRATION INDICATION SYSTEM

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INTRODUCTION

This supplement provides information and procedures for an airplane which has experienced a high engine turbine vibration, as indicated on the turbine vibration indicator.

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable except where superseded by the information given in this supplement.

This supplement is only applicable to airplanes with RAC Service Bulletin SB 31-3702 and subsequent revisions incorporated.

SECTION 1 - GENERAL

No Change

SECTION 2 - LIMITATIONS

No Change

SECTION 3 - EMERGENCY PROCEDURES

No Change

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

HIGH ENGINE VIBRATION

TVI Indication Amber

- If engine malfunction is confirmed or general vibration is present, complete **ENGINE SHUTDOWN or FAILURE IN FLIGHT** procedure: Airplane Flight Manual **- EMERGENCY PROCEDURES - Section 3**.
- If other indications are normal, slowly retard relevant thrust lever.
- If indicated vibration level does not change with N_1, continue to operate engine, monitoring all indications.

If indicated vibration level changes with N_1, reduce power until vibration indication is in the normal (green) range.

If indication remains amber at idle, complete **ENGINE SHUTDOWN or FAILURE IN FLIGHT** procedure: Airplane Flight Manual **- EMERGENCY PROCEDURES - Section 3**.

Sub-section 4.10 - NORMAL PROCEDURES

BEFORE TAKE-OFF CHECKS

TVI..TEST

SECTION 5 - PERFORMANCE

No Change

SECTION 6 - WEIGHT & BALANCE

No Change

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0049
for
TAKE-OFF CONFIGURATION WARNING

**THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL**

P/N 140-590032-0005

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: G M Baker ....

Gerald M. Baker, Acting Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: .....12/21/04...

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0049
for
TAKE-OFF CONFIGURATION WARNING

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INTRODUCTION

This supplement provides procedures when the MWS red CONFIG annunciator illuminates and a warning horn sounds during takeoff. Information is also provided for in-flight warnings.

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable except where superseded by the information given in this supplement.

This supplement is only applicable to airplanes with RAC Service Bulletin SB 31-3703 and subsequent revisions incorporated.

SECTION 1 - GENERAL

No Change

SECTION 2 - LIMITATIONS

No Change

SECTION 3 - EMERGENCY PROCEDURES

TAKE-OFF CONFIGURATION WARNING

Horn Sounds and **CONFIG**

Abort Takeoff

Thrust levers .... Close
Brakes .... Apply
AIR BRAKES .... Deploy
Thrust reversers .... Deploy

NOTES:

1. *"Horn and CONFIG" warning, on the ground, indicates that power levers are advanced above 60% N*$_1$ *and one or more of the following:*
   - *Flaps greater than 15°*
   - *Airbrakes Open*
   - *Elevator trim out of take-off limits*
   - *Aileron trim not centered*

2. *In the air, the warning indicates that power levers are advanced above 60% N*$_1$ *and the following:*
   - *Gear Down*
   - *Airbrakes Open*

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

FLIGHT CONTROLS

OUT OF TRIM INDICATION

This procedure of the Airplane Flight Manual must be disregarded.

Sub-section 4.10 - NORMAL PROCEDURES

No Change

SECTION 5 - PERFORMANCE

No Change

SECTION 6 - WEIGHT & BALANCE

No Change

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0051
AIRBRAKE BAULK LEVER INSTALLATION
for
AIRPLANES REGISTERED in CANADA

THIS SUPPLEMENT SUPERSEDES SUPPLEMENT P/N 140-590032-0035
AND
IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL:

P/N 140-590032-0005

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: ....
Actg
Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

On Behalf Of Transport Canada
Civil Aviation (TCCA)

Approval Date: 2/7/05

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0051
AIRBRAKE BAULK LEVER INSTALLATION
for
AIRPLANES REGISTERED in CANADA

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SECTION 6 - WEIGHT & BALANCE ....5 of 5

INTRODUCTION

This supplement supersedes supplement P/N 140-590032-0035 and applies to airplanes with Service Bulletin SB 27-3554 and subsequent revisions incorporated.

The limitations, procedures and information contained in other sections of the Airplane Flight Manual are applicable except where superseded by the information given in this supplement.

For limitations, procedures and performance information not listed within this supplement, consult the basic Airplane Flight Manual.

SECTION 1 - GENERAL

No change.

SECTION 2 - LIMITATIONS

MISCELLANEOUS LIMITATIONS

Lift Dump

Lift dump is to be used only when the airplane is on the ground.

NOTE: The airbrake baulk lever indicator rod will protrude at touchdown to permit lift dump selection, unless the lever is held against the baulk. No attempt to select airbrake/lift dump should be made before touchdown.

If after touchdown the lever is still baulked, it should be pushed forward and then re-selected, because continued pressure against the baulk will prevent it from withdrawing.

SECTION 3 - EMERGENCY PROCEDURES

No Change.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

SUB-SECTION 4.05 - ABNORMAL PROCEDURES

No Change.

SUB-SECTION 4.10 - NORMAL PROCEDURES

BEFORE TAKE-OFF CHECKS

Following ENG CMPTER, RUDDER BIAS & T/R.....Check, accomplish an Air Brake Baulk test as follows:

A/B BAULK Test Switch........................	Push and check that A/B BAULK indicating rod protrudes and the AIRBRAKE lever is not baulked.
FLAPS	Select the FLAPS 15° position
A/B BAULK Test Switch........................	With the test switch remaining pushed, check the A/B BAULK indicating rod retracts to the flush position and the AIRBRAKE lever is baulked.
A/B BAULK Test Switch........................	Release and check the baulk indicating rod protrudes.
FLAPS	Set as required for takeoff

AFTER TAKE-OFF CHECKS

Following FLAPS.....Up, accomplish an Air Brake Baulk check as follows:

A/B BAULK Indicator ....Protrudes

LANDING CHECKS

Following FLAPS.....Set, accomplish an Air Brake Baulk check as follows:

NOTE: After touchdown the A/B BAULK indicator rod will protrude to permit LIFT DUMP selection. If not, the AIRBRAKE lever should be pushed forward to release pressure against the baulk and then re-selected.

A/B BAULK Indicator ....Flush

SECTION 5 - PERFORMANCE

SUB-SECTION 5.05 - GENERAL

CONFIGURATION

Air Brakes

SHUT, except that on landing they are extended to the lift dump position after touchdown.

A baulk prevents movement of the airbrake in flight when the flaps are not up. Indication of baulk engagement is provided by an A/B BAULK mechanical indicator.

SECTION 6 - WEIGHT & BALANCE

No change.

Hawker Beechcraft

Hawker 800XP

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0053
REVISION 3
for
COLLINS FMS-6000
FLIGHT MANAGEMENT SYSTEM
Version 3.0.3

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL

P/N 140-590032-0005

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: D M Baker..

Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 4/8/05..

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0053
Revision 3
for
COLLINS FMS-6000
FLIGHT MANAGEMENT SYSTEM
Version 3.0.3

Supplement Status	*Date*
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Revision 3	Sep 19, 2011

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0053
Revision 3
for
COLLINS FMS-6000
FLIGHT MANAGEMENT SYSTEM
Version 3.0.3

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0	1 of 10 thru 10 of 10	Original	4/8/05	
1	1 of 12 thru 12 of 12	Revised page footers on all pages.	11/17/05	
	2 of 12	Added a new List Of Effective Pages.		
	3 of 12 and 4 of 12	Revised Log of Revisions with Revision 1 information.		
	5 of 12	Revised Table of Contents.		
	7 of 12	Revised required equipment list for operations in European P-RNAV airspace.		
2	1 of 12 thru 12 of 12	Revised page footers on all pages.	12/6/06	
	3 of 12	Revised Log of Revisions with Revision 2 information.		
	5 of 12	Revised Contents headings with the deletion of the redundant term SUPPLEMENT.		
	7 of 12	Revised wording regarding PRNAV operations in Step 5.		
	10 of 12	Deleted No. 2 text in reference to the Continuum Pilot's Guide.		
	11 of 12	Renumbered step on Page 12.		

Rev No.	*Page No(s)*	*Description*	*Date of Revision*	*FAA Approved*
3	1 of 12 thru 12 of 12	Revised page footers and headers on all pages to reflect Revision 3 status.	9/19/2011	
	1 of 12	Revised Title Page for Revision 3 and updated Copyright statement.		
	2 of 12	Changed Supplement Status and List of Effective Pages to reflect Revision 3 status.		
	4 of 12	Updated Log of Revisions with Revision 3 information.		
	5 of 12	Under INTRODUCTION, removed "RAC" references. Added a comma to the second paragraph. Under Step 1, made "database" one word. Under Step 2, removed a comma.		
	6 of 12	Under Step 1, removed commas in four places and added a comma. Under Step 2, removed commas in three places and added a comma.		
	7 of 12	Added (continued) after NAVIGATION CAPABILITIES heading. Under Step 4, added periods in two places. Under Step 5, revised P-RNAV European Airspace Operations to remove equipment table and refer P-RNAV equipment requirements to Section 2 - LIMITATIONS of the Airplane Flight Manual.		
	8 of 12	Under General Step 5, "data base" was changed to "database".		
	9 of 12	Added (continued) after AVIONICS LIMITATIONS heading. Under Step 2, added two commas.		
	10 of 12	Under NOTE 1, removed a comma. Under NOTE 2, added a comma. Under NOTE 3, removed a comma.		
	11 of 12	Added (continued) after NORMAL PROCEDURES heading.		

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  Sub-section 4.05 - ABNORMAL PROCEDURES....10 of 12
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INTRODUCTION

This supplement is only applicable to airplanes with Kit No. 149-3419 or Service Bulletin 34-3722 and airplane serials 258717 and after with Collins Flight Management System FMS-6000 Software Version 3.0.3.

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable, except where superseded by the information given in this supplement.

The new status FMC-6000 module incorporates software changes to enhance performance to support customer requirements. No modifications to the hardware have been made.

The software modifications include the following:

1. The FREQUENCY DATA page is an additional feature accessed through the INDEX page, which displays the airport communication frequencies that are stored in the FMS navigational database.

2. The additional capability to display the full names of "NAVAIDs" and airports are located on the DATA BASE page.

INTRODUCTION (continued)

3. The "CLOSEST ARPTS" has been renamed "NEAREST APTS".

4. The FMS changed the VNAV Vertical Deviation scaling as follows:

   - For enroute and terminal areas, Full Scale changed from 1000 feet to 500 feet.
   - For approach area, Full Scale changed from 500 feet to 250 feet.

5. There is no longer a requirement to add or append the letters "NB" to a Non-Directional Beacon (NDB) identifier. A selection list will be shown to select the correct Non-Directional Beacon. The PFD/MFD also will not have the "NB" appended to the NDB identifiers.

SECTION 1 - GENERAL

NAVIGATION CAPABILITIES

The Collins FMS-6000 Flight Management System is approved under Technical Standard Order (TSO) C115b and C129a Class B1/C1. When the FMS-6000 is receiving appropriate GPS signals, it meets the accuracy specifications for the following operations:

1. Oceanic and Remote:

   In accordance with AC 20-130A and AC 20-138A, two FMS-6000 systems must be operating and receiving usable signals from two operating Collins GPS sensors and used in conjunction with the Collins prediction program, CPN 832-3443-007, Rev - or later version, or a single FMS-6000 used in conjunction with the Collins prediction program, CPN 832-3443-007 or later version, on routes approved for single GPS navigation.

   NOTE: This does not constitute an operational approval.

2. North Atlantic (NAT) Minimum Navigational Performance Specifications (MNPS) Airspace:

   In accordance with the criteria of AC 91-49 and AC 20-138A, two FMS-6000 systems must be operating and receiving usable signals from two operating Collins GPS sensors and used in conjunction with the Collins prediction program, CPN 832-3443-007, Rev - or later version, or a single FMS-6000 used in conjunction with the Collins prediction program, CPN 832-3443-007 or later version, on routes approved for single GPS navigation.

   NOTE: This does not constitute an operational approval.

3. RNP-10 Airspace:

   In accordance with the criteria of FAA Order 8400.12A without time limitations, the FMS-6000 meets the minimum requirements for Required Navigation Performance-10 (RNP-10). Two FMS-6000 systems must be operating and receiving usable signals from two operating Collins GPS sensors and used in conjunction with the Collins prediction program, CPN 832-3443-007, Rev - or later version.

   NOTE: This does not constitute an operational approval.

SECTION 1 - GENERAL (continued)

NAVIGATION CAPABILITIES (continued)

4. Enroute and Terminal, Including BRNAV / RNP-5:

   In accordance with AC 20-130A, AC 90-96 and JAA AMJ 20 x 2, Leaflet 2, Revision 1, the FMS-6000 must be receiving usable signals from one or more of the following:

   - One VOR/DME or multiple DMEs.
   - One GPS sensor and is not in dead reckoning (DR).

   NOTE: This does not constitute an operational approval.

5. P-RNAV European Airspace Operations:

   Provided the FMS is receiving adequate usable sensor inputs, it has been demonstrated capable of and has been shown to meet the accuracy specifications of Operation in European P-RNAV airspace in accordance with JAA Temporary Guidance Material, Leaflet No. 10. Refer to Section 2 - LIMITATIONS of the Airplane Flight Manual for the required P-RNAV equipment list.

6. Non-Precision Approach:

   In accordance with AC 20-130A, AC 20-138A, AC 90-94A and TSO C129a Class B1/C1, the GPS APPR annunciation or APPR annunciation must be illuminated at the final approach fix (as determined by the approach being flown) provided the FMS-6000 is receiving adequate useable sensor inputs.

7. FMS VNAV Operations:

   (VFR / IFR enroute, terminal and approach FMS VNAV operation, including barometric VNAV operation) in accordance with AC 20-129 and AC 90-97. The FMS-6000 provides the necessary navigation performance and is compatible with RNAV approaches published in accordance with FAR Part 97, including LNAV/VNAV DA minimums, provided the FMS-6000 is receiving adequate useable sensor inputs.

   NOTE: This does not constitute an operational approval for using DA in lieu of MDA.

SECTION 2 - LIMITATIONS

AVIONICS LIMITATIONS

FLIGHT MANAGEMENT SYSTEM

General

1. The Collins FMS-6000 Flight Management System for the Hawker 800XP Operator's Guide No. 523-0780705 2nd Edition dated 25 Oct 02, or latest revision, appropriate for the system and software installed, must be immediately available to the flight crew during all operations.
2. The system program number displayed on the STATUS page must be SCID 832-4117-073.
3. The Performance database displayed on the STATUS page must be CPN: 815-3198-002.
4. The V_{SPEED} database displayed on the STATUS page must be CPN: 815-2850-003.
5. IFR enroute and terminal navigation is prohibited unless the pilot verifies the currency of the database or verifies each selected waypoint for accuracy by reference to current approved data.
6. As required by the operating rules applicable to the specific type of operation, the airplane must have additional navigation equipment appropriate to the intended route and it must be operational.
7. During periods of dead reckoning, as indicated by the FMS DR annunciation, the FMS shall not be used as the primary source of navigation.
8. Fuel display parameters are advisory only and do not replace the primary fuel quantity or fuel flow gauges for loading or range/reserve planning.

Vertical Navigation

1. When using FMS VNAV, the barometric altimeters must be used as the primary altitude reference for all operations.
2. VNAV approach guidance to a DA is not authorized if the reported surface temperature is below the Baro-VNAV minimum temperature limitation specified on the applicable approach procedure chart. This limitation may not apply to operations in regions where the controlling authority has approved the use of temperature compensation, provided the temperature compensation feature of the FMS is enabled.
3. When conducting instrument approach using LNAV/VNAV DA minimums, the flight director or autopilot must be used and VGP mode must be active.
4. Use of VNAV guidance for a V-MDA approach that includes a step-down fix between the final approach fix and missed approach point is prohibited.
5. Use of VNAV while conducting a missed approach procedure is prohibited.

SECTION 2 - LIMITATIONS (continued)

AVIONICS LIMITATIONS (continued)

Approach

1. FMS instrument approaches must be accomplished in accordance with approved instrument approach procedures that are retrieved from the FMS navigation database. The FMS database must incorporate the current update cycle.

2. The FMS, with inputs from the GPS, may only be used for approach guidance if the reference coordinate data system for the instrument approach is WGS-84 or NAD-83.

3. FMS instrument approaches must be conducted in the approach mode, the GPS integrity monitoring (when using GPS for approach guidance) must be available at the final approach fix, and the GPS APPR (green) or APPR (green) annunciation on the PFD must be illuminated.

4. When using FMS guidance for conducting instrument approach procedures that do not include "or GPS" in the title of the published procedure, the flight crew must verify that the procedure specified NAVAID and associated avionics are tuned and displayed.

5. Use of FMS guidance for conducting instrument approach procedures is prohibited with the FMS annunciation NO APPR (white or amber) illuminated.

6. ILS, LOC, LOC-BC, LDA, and SDF approaches using the FMS for approach guidance are prohibited.

7. When the approach at the destination is based on GPS guidance and an alternate airport is required by the applicable operating rules, it must be served by an approach based on other than GPS navigation, the airplane must have operational equipment capable of using that navigation aid, and the required navigation aid must be operational.

8. IFR non-precision approach approval is limited to published approaches within the U.S. National Airspace System. Approaches to airports in other airspace are not approved unless authorized by the appropriate governing authority.

9. The FMS-6000 is approved for FMS VFR approaches as a VFR pilot aid only.

SECTION 3 - EMERGENCY PROCEDURES

No change.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

No change.

Sub-section 4.10 - NORMAL PROCEDURES

Flight Management System

1. Refer to Collins FMS-6000 Flight Management System for the Hawker 800XP Operator's Guide No. 523-0780705 2nd Edition dated 25 Oct 02, or latest revision, appropriate for the system and software installed.

All FMS annunciations are displayed on the applicable PFD and MFD.

NOTES:

1. *Display of "RWY" on the CDU LEGS page under the Altitude field does not necessarily provide VNAV guidance to 50 feet above the runway threshold or align the airplane with the runway.*
2. *Barometric VNAV guidance including the approach transition, final approach segment, and the missed approach procedure are not temperature compensated.*
3. *The pilot needs to monitor VNAV to assure the altitude constraints are met during VNAV operation where there is an altitude constraint at a waypoint with a course change greater than 90°.*

SECTION 4 - ABNORMAL/NORMAL PROCEDURES (continued)

Sub-section 4.10 - NORMAL PROCEDURES (continued)

2. The following is a communication type list for the airport communication frequencies. These types of communication frequencies are displayed on the FREQUENCY DATA pages on the CDU.

Label	***Type***
ACC	Area Control Center
AIRLIFT CP	Airlift Command Post
APP	Approach
APP RDR	Director (Approach Radar)
ARR	Arrival
ARSA	Airport Radar Service Area
ASOS	Automated Surface Observing System
ATIS	Automatic Terminal Information Service
AWOS	Automated Weather Observing System
CLNC DEL	Clearance Delivery
CTL	Control
DEP	Departure Control
FSS	Flight Service Station
GATE	Gate Control
GCO	Ground Communication Outlet
GND	Ground
HELI	Helicopter
INFO	Information
MULTICOM	Multicom
OPS	Operations
PRE TAXI	Clearance, Pre Taxi
RADIO	Radio
RAMP	Ramp Control
RDR	Radar
RFSS	Remote Flight Service Station
TCA	Terminal Control Area
TMA	Terminal Control Area
TRML	Terminal
TRML CTL	Control Area (Terminal)
TRSA	Terminal Radar Service Area
TWEB	Transcribed Weather Broadcasts
TWR	Tower
UAC	Upper Area Control
UNICOM	Aeronautical Advisory Service
VOLMET	Meteorological Information for Aircraft in Flight

SECTION 5 - PERFORMANCE

No change.

SECTION 6 - WEIGHT & BALANCE

No change.

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0055
for
AIRPLANES NOT EQUIPPED WITH A STANDBY INVERTER

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL
P/N 140-590032-0005
for
Airplanes Equipped With Collins Pro Line 21 Avionics
Serial Nos. 258760 and after

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: DM Baker ....
for
Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 7/25/05 ....

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0055
for
AIRPLANES NOT EQUIPPED WITH A STANDBY INVERTER

LOG of REVISIONS

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
0	1 of 8 thru 8 of 8	Original	6/7/05	
1	1 of 8 thru 8 of 8	Title Page, Page 3 of 8, Page 7 of 8 and Page 8 of 8: Revised the airplane Serial Number effectivity to 258760 and after. Page 3 of 8: Added Sub-Header of LEAVING AIRPLANE (TERMINATING FLIGHT) CHECKS.	7/25/05	

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INTRODUCTION

This supplement applies only to airplanes not equipped with a Standby Inverter (Airplane Serial Nos. 258760 and after). All references to the Standby Inverter and XE FAIL or the XE BUS are removed by this supplement.

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable except where superseded by the information given in this supplement.

SECTION 1 - GENERAL

CONTENTS

Annunciators

Throughout the procedural sections in the Airplane Flight Manual, annunciators are provided as the examples shown below:

EMERGENCY	ABNORMAL	ADVISORY
OIL 1 LO PRESS	HYD 1 LO PRESS	AUX FUEL XFR

SECTION 2 - LIMITATIONS

No Change

SECTION 3 - EMERGENCY PROCEDURES

ELECTRICAL

DOUBLE GENERATOR FAILURE

BATT 1 CNTCTR
BATT 2 CNTCTR
GEN 1 FAIL **BUS TIE OPEN** **GEN 2 FAIL**

and

ELECT ↑

and

XS 1 FAIL **XS 2 FAIL**
INV 1 FAIL **INV 2 FAIL**

NOTES:

1. *Copilot displays will be inoperative.*
2. *Avoid flight in icing conditions. Airframe ice protection will not be available and ice accumulation may cause significant deterioration of performance.*

PANEL LTS (if required)	EMERG
BATT	EMERG
GEN 1 and 2	TRIP both
One generator	Attempt to reset

NOTE: To attempt a reset, hold one GEN switch to CLOSE for 5 seconds and then release. If unsuccessful, hold the other GEN switch to CLOSE for 5 seconds and then release.

***Do not make** more than one reset attempt with each generator. If either generator is reset, do not attempt to reset the other one;* proceed as for **SINGLE GENERATOR FAILURE** - *ABNORMAL PROCEDURES - Sub-section 4.05 of the Airplane Flight Manual and reset electrical services as required.*

DOUBLE GENERATOR FAILURE
Continued Next Page →

DOUBLE GENERATOR FAILURE (continued)

If Generator Reset Unsuccessful

ENG CMPTERs 1 & 2 ....OFF
ENG ANTICE 1 & 2 ....ON
Electrical loads ....Reduce to minimum, at pilot's discretion.

NOTES:

1. *It is essential that electrical loads are kept to a minimum for flight. If this procedure is followed, there is sufficient battery power to maintain emergency loads for approximately 30 minutes. This assumes the continuous use of the following:*

   Left pitot heater; pilot's audio system; pilot's PFD; pilot's MFD; GPS 1 (Latitude/Longitude data on CDU 1 only); CDU 1; COMM 1; VHF NAV 1 (course guidance data on ESIS only); DME 1 (distance data on ESIS only); Transponder 1 (Mode C inoperative); ADC 1, AHRS 1 and intermittent use of:

   Chart lights ....10 minutes total use
   Cabin temperature control............................In MANUAL mode

2. *Other PE services must be switched off or isolated by pulling the relevant circuit breakers.*

   The following loads may be selected on at the pilot's discretion:

Service	**Duty Cycle In Minutes**	**Reduction In Flight Time In Minutes**
Single Fuel Pump	5	2
	10	4
Landing Light	5	2
	10	4
ENG IGNITION ON Single Engine	10	0.5
ENG IGNITION ON Two Engines	10	1
One Engine Computer	5	0.75
	10	1.5
Two Engine Computers	5	1.5
	10	3

DOUBLE GENERATOR FAILURE
Continued Next Page ⟶

DOUBLE GENERATOR FAILURE (continued)

NOTES: (continued)

3. *The emergency flight time quoted is based upon the assumption that at the time double generator failure occurs, the airplane batteries are at a minimum allowable capacity of 80% and with an electrolyte temperature of -20°C.*

   These are the anticipated most severe conditions. More favorable conditions will extend the emergency flight time as will circumstances which permit limiting the use of all the services available.

If More Than 30 Minutes From Landing

Main airplane batteries should provide electrical power to the Pilot's PFD, MFD, CDU 1, VOR 1, DME 1, Transponder 1, Pilot's Audio Panel, AHRS 1 and ADC 1 for a minimum of 30 minutes.

B1 & B2 voltage..Monitor

When B1 & B2 voltages decrease to approximately 21 volts:

Pilot's MFD..REV
EMERG RADIO..On
(located above DA-A circuit breaker panel).

CTL-23 Tuner ....ON

As the main airplane batteries deplete, the Pilot's PFD and DME 1 will fail.

If Raytheon Aircraft Company Field Service Kit No. 149-3410 has been installed or Raytheon Aircraft Company Service Bulletin SB 24-3555 has been accomplished (correcting the Radio Master Bussing), Transponder 1 will also fail.

Standby battery No. 3 will provide power to AHRS 1, ADC 1 and a full display on the Pilot's MFD for approximately 8 minutes. After that time, standby batteries No. 3 and 4 will provide power to CDU 1, VOR 1, COMM 1 and the Pilot's Audio Panel.

If Raytheon Aircraft Company Field Service Kit No. 149-3410 has been installed or Raytheon Aircraft Company Service Bulletin SB 24-3555 has been accomplished (correcting the Radio Master Bussing), power will be provided to the Copilot's Audio Panel.

Refer to the Electronic Standby Instrument System (ESIS) for flight and navigation information, which will be powered by standby battery No. 6.

The CTL-23 tuner will be available for control of communication and navigation frequencies.

SECTION 3 - EMERGENCY PROCEDURES continued

ELECTRICAL

XE FAIL

All steps listed under the **XE FAIL** procedure (located in the EMERGENCY PROCEDURES Section of the Airplane Flight Manual) do not apply to Airplane Serial Nos. 258760 and after. All steps of this procedure must be disregarded.

XS 1 FAIL and XE FAIL

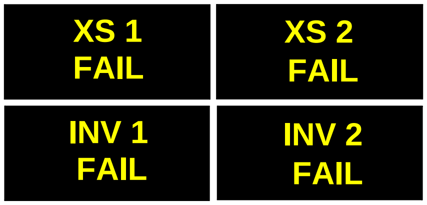
All steps listed under the **XS1 FAIL and XE FAIL** procedures (located in the EMERGENCY PROCEDURES Section of the Airplane Flight Manual) do not apply to Airplane Serial Nos. 258760 and after. All steps of this procedure must be disregarded.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

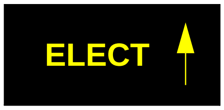
Sub-section 4.05 - ABNORMAL PROCEDURES

ELECTRICAL

DOUBLE INVERTER FAILURE



and



If Both INV 1 FAIL and INV 2 FAIL Annunciators Illuminate, A Reset of One Inverter May Be Attempted If The Flight Condition Dictates.

If the inverter does not reset, the following systems or components will be inoperative:

- AOA indexer lights
- AOA indicator
- Autopilot Pitch Trim
- Cabin Pressurization Fan Venturi (Do not introduce pressurization air on the ground from either the APU, if installed, or the Main Air Valves)
- Ice Detector (Avoid flight in icing conditions)
- Mach Trim
- Stall IDENT 1 and Stall IDENT 2

SECTION 4 - ABNORMAL/NORMAL PROCEDURES continued

Sub-section 4.10 - NORMAL PROCEDURES

BEFORE START CHECKS

The following step in the Airplane Flight Manual does not apply to Airplane Serial Nos. 258760 and after:

This step must be disregarded.

STBY INV .... ARM - Check XE Volts

LEAVING AIRPLANE (TERMINATING FLIGHT) CHECKS

The following steps in the Airplane Flight Manual do not apply to Airplane Serial Nos. 258760 and after:

These steps must be disregarded.

With APU (if installed) only running
STBY INV.................................OFF

With No. 2 engine only running
STBY INV .... OFF

SECTION 5 - PERFORMANCE

No Change

SECTION 6 - WEIGHT & BALANCE

No Change

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0059
for
MODE S ENHANCED SURVEILLANCE

THIS SUPPLEMENT IS APPLICABLE TO FAA APPROVED
AIRPLANE FLIGHT MANUAL P/N 140-590032-0005
for
Airplane Serial Nos. 258717 and Subsequent
or
Airplanes which have complied with
Raytheon Aircraft Company Service Bulletin SB 34-3717 and Kit No. 149-3417

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: ....

for Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 08/05/05

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0059
for
MODE S ENHANCED SURVEILLANCE

LOG of REVISIONS

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
0	1 of 5 thru 5 of 5	Original	4/19/05	
1	4 of 5	Edited title under AVIONICS LIMITATIONS to read --- Mode S Enhanced Surveillance Transponder. Specified Track Angle Rate parameter available only when Inertial Reference System is installed.	5/11/05	Tina J. Miller
2	4 of 5	Changed Track Angle Rate data. Added True Airspeed data.	08/05/05	

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SECTION 5 - PERFORMANCE .... 5 of 5

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INTRODUCTION

This supplement provides compliance information for the Mode S Enhanced Surveillance System and is applicable only to Hawker 800XP Pro Line 21 airplane Serial Nos. 258717 and subsequent or airplanes which have complied with Raytheon Aircraft Company Service Bulletin SB 34-3717 and Kit No. 149-3417.

SECTION 1 - GENERAL

No Change

SECTION 2 - LIMITATIONS

AVIONICS LIMITATIONS

Mode S Enhanced Surveillance Transponder

The installed Mode S system satisfies the data requirements of the International Civil Aviation Organization (ICAO) Doc. 7030/4, Regional Supplementary Procedures for SSR Mode S Enhanced Surveillance in designated European airspace.

The capability to transmit data parameters is designated in the table below.

Parameter	Available
Magnetic Heading	Yes
Indicated Airspeed	Yes
Mach Number	Yes
Vertical Rate	Yes
Roll Angle	Yes
Track Angle Rate	* No
# True Airspeed	Yes
True Track Angle	Yes
Groundspeed	Yes
Selected Altitude	Yes
Barometric Pressure Setting	Yes

* Track Angle Rate not available (IRS not installed).
# True Airspeed substituted for Track Angle Rate.

SECTION 3 - EMERGENCY PROCEDURES

No Change

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

No Change

SECTION 5 - PERFORMANCE

No Change

SECTION 6 - WEIGHT & BALANCE

No Change

Hawker Beechcraft

Hawker 800XP

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0063
REVISION 2
for
AIRPLANES EQUIPPED WITH INTEGRATED FLIGHT INFORMATION SYSTEM (IFIS-5000) and Pro Line 21 RADIOS

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL

P/N 140-590032-0005

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: William Schinstock

for Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 8/17/05

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0063
Revision 2
for
INTEGRATED FLIGHT INFORMATION SYSTEM (IFIS-5000) and Pro Line 21 RADIOS

Supplement Status	Date
Original Issue	Aug 17, 2005
Revision 1	Apr 14, 2008
Revision 2	Sep 19, 2011

LIST OF EFFECTIVE PAGES

Use the List Of Effective Pages to determine the current status of this supplement.

Pages affected by the current revision are indicated by an asterisk (*) preceding the page number.

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
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INTEGRATED FLIGHT INFORMATION SYSTEM (IFIS-5000) and Pro Line 21 RADIOS

LOG OF REVISIONS

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
0	1 of 16 thru 16 of 16	Original	8/17/05	wc Schinstock
1	1 of 16 thru 16 of 16	Revised supplement format and page footers.	4/14/08	
	1 of 16	Revised Title page for Revision 1.		
	2 of 16	Added new List of Effective Pages.		
	3 of 16	Revised Log of Revisions for Revision 1.		
	4 of 16	Added an Intentionally Left Blank Page.		
	5 of 16	Revised Contents to include Title, LOEP and LOR pages.		
	8 of 16	Revised the required equipment list for P-RNAV operations and changed text statement to an advisory NOTE.		
		Revised Double Generator Failure procedure to include airplanes without Standby Inverter Installations. Added (if installed).		
	15 of 16	Equipment list deleted, not applicable.		

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
2	1 of 18 thru 18 of 18	Revised page headers and footers on all pages to reflect Revision 2 status.	9/19/2011	
	1 of 18	Revised Title Page for Revision 2 and updated Copyright statement.		
	2 of 18	Revised Supplement Status and List of Effective Pages to reflect Revision 2 information.		
	3 of 18 thru 5 of 18	Updated Log of Revisions with Revision 2 information.		
	7 of 18	Updated CONTENTS for pagination changes.		
	9 of 18	Under INTRODUCTION, added a comma. Added a period after "No Change" statement. Item 2, removed a comma. Item 3, changed "aircraft" to read "airplane". Changed "intended" to read "approved" and added limitation of "or weather avoidance".		
	10 of 18	Under P-RNAV, revised text to remove equipment table and refer P-RNAV equipment requirements to Section 2 - LIMITATIONS of the Airplane Flight Manual.		
	11 of 18	Under FSU 1 BATT PWR Switch, changed "temp" to "temperature", added a comma, and changed "enable" to "activation" in text.		
	12 of 18	Under Item 2, changed "includes" to "include". Under Item 3, changed "it is not" to "they are not". Under Item 4, removed hyphen from "Multi-function" and removed "controlled" from text. Under Item 5, added three periods.		

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
2	13 of 18	Under Item 6, added a hyphen to "Display-selectable" and added a comma. Relocated Figure Title and Number under graphic, and added a hyphen to "Display-Selectable" in Figure Title.		
	14 of 18	In table, shifted "2 databases" down. Under NOTE 1, added a comma. Under Item 8, added a hyphen to "on-screen", removed "controlled" from text, changed "thru" to "through", added two commas, and removed one apostrophe.		
	16 of 18	Under Item 11, added a hyphen to "auto-loaded" and capitalized "Electronic Charts".		
	17 of 18	Under Item 12, removed a colon, changed "situations" to "situational", added a comma, and changed "aircraft" to "airplane" in one place. Under Item 13, removed hyphen from "geo-political" and changed capitalization of "Overlays", "Geopolitical Boundaries", and "airspace and airways". Added periods after "No Change" statements.		

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INTRODUCTION

This supplement applies only to airplane Serial Nos. 258744 and after with the IFIS-5000 Integrated Flight Information System installed.

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable, except where superseded by the information given in this supplement.

This installation does not provide all of the system displays and operations of the IFIS-5000.

SECTION 1 - GENERAL

No Change.

SECTION 2 - LIMITATIONS

AVIONICS LIMITATIONS

INTEGRATED FLIGHT INFORMATION SYSTEM (IFIS-5000)

1. The Airplane Flight Manual Supplement as appropriate for the system software installed must be immediately available to the flight crew.

2. The Collins Integrated Flight Information System IFIS-5000 Operator’s Guide, document number 523-0806347, dated 13 May 04, or later revision appropriate for the system and software installed must be immediately available to the flight crew during all operations.

   This publication contains the description and operation of the IFIS-5000 installation and must be available for use.

3. The IFIS-5000 system provides supplemental airplane situational awareness information. It is not approved as a means for navigation or weather avoidance.

4. The use of aircraft symbol on the Electronic Charts for navigation is prohibited.

5. The Electronic Charts database utilized must incorporate the current update cycle.

6. Display ranges less than 50 miles must not be used when GEO-POL data is selected for display. At shorter ranges, the situational picture provided by these data (i.e. rivers, lakes, oceans, and political boundaries) may appear erroneous.

SECTION 2 - LIMITATIONS (continued)

P-RNAV

Provided the FMS is receiving adequate usable sensor inputs, it has been demonstrated capable of and has been shown to meet the accuracy specifications of Operation in European P-RNAV airspace in accordance with JAA Temporary Guidance Material, Leaflet No. 10. Refer to Section 2 - LIMITATIONS of the Airplane Flight Manual for the required P-RNAV equipment list.

SECTION 3 - EMERGENCY PROCEDURES

ELECTRICAL

DOUBLE GENERATOR FAILURE

If Generator Reset Unsuccessful

ENG CMPTERs 1 & 2	OFF
ENG ANTICE 1 & 2	ON
STBY INV (If Installed)	Check ARM
XE FAIL	If illuminated - proceed as for XE FAIL.
Electrical loads	Reduce to minimum, at pilot's discretion.
FSU 1 BATT PWR	ENABLE (as required for file server operation).

NOTE: Each operation of the FSU 1 BATT PWR switch will provide 2 to 3 minutes of file server operation.

SECTION 3 - EMERGENCY PROCEDURES (continued)

AVIONICS

FSU 1 BATT PWR Switch

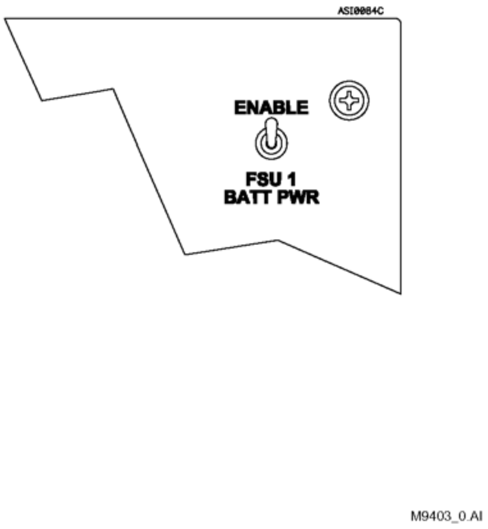
Loss of primary power from the PS1 bus for more than 2-1/2 minutes will cause the File Server Unit to display "FSU INOP" on the Pilot's MFD. The last chart displayed before "FSU INOP" is visible, will remain visible and selectable provided a new request for a new chart is not activated.

The XTLK flag will be in view until the MFD has re-established communications with the off side display. The NO GO REFERENCE symbol will be displayed until valid position data is received by the MFD. The CHECK DATABASE STATUS is visible because the FMS is not powered.

To re-activate the File Server Unit, momentarily enable the switch labeled "FSU 1 BATT PWR" located on the outside air temperature panel (Figure 1).

After 25 to 30 seconds, the "FSU INOP" annunciation on the MFD will extinguish and the file server is now available for new chart requests for an additional 2 to 3 minutes.

Each additional activation of the switch will provide another 2 to 3 minutes of file server operation.



FSU 1 BATT PWR Switch
Figure 1

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

FSU INOP Annunciation

Refer to X-Side FSU display or other approved charts.

NOTE: Any currently displayed chart will remain displayed. Selection of any chart from the chart MAIN INDEX MENU will cause the loss of all chart display capability.

Sub-section 4.10 - NORMAL PROCEDURES

BEFORE START CHECKS

References to the BARO PRESS and CAT II switches do not apply to airplane Serial Nos. 258744 and after.

CAT II CHECKS

References to the CAT II switch do not apply to airplane Serial Nos. 258744 and after.

SYSTEMS DESCRIPTION

IFIS-5000 INTEGRATED FLIGHT INFORMATION SYSTEM

1. The IFIS-5000 system introduces electronic airport and procedure charts, enhanced PPOS, and Plan map overlay information. The map overlays are displayed on the Multifunction Displays (MFD).

2. Electronic charts include Instrument/Visual Approach charts, Terminal Area Arrival/Departure charts, Airfield Layout charts, and chart NOTAMS. These electronically stored charts are loaded from electronic media (e.g. CD-ROM) and have similar validity and update requirements as their paper equivalents. This installation does not replace or assert primacy over existing systems.

3. Enhanced PPOS and Plan map overlays include geo-political boundaries (i.e. state and national boundaries, coast lines, rivers and lakes), restricted airspace, controlled airspace, and high and low level airways. The use of Enhanced Map overlays is strictly advisory and they are not to be used for navigation.

4. The advanced features are displayed on LCD Adaptive Flight Displays (AFD) in the Multifunction display (MFD) position. The features are controlled using on-screen graphical controls (i.e. menus and data entry fields) via the Cursor Control Panel (CCP), AFD bezel push-button, and CDU.

5. The IFIS-5000 system user interface consists of the following equipment:

   - MFD AFD Displays.
   - Cursor Control Panel for each pilot.
   - CDU for each pilot.

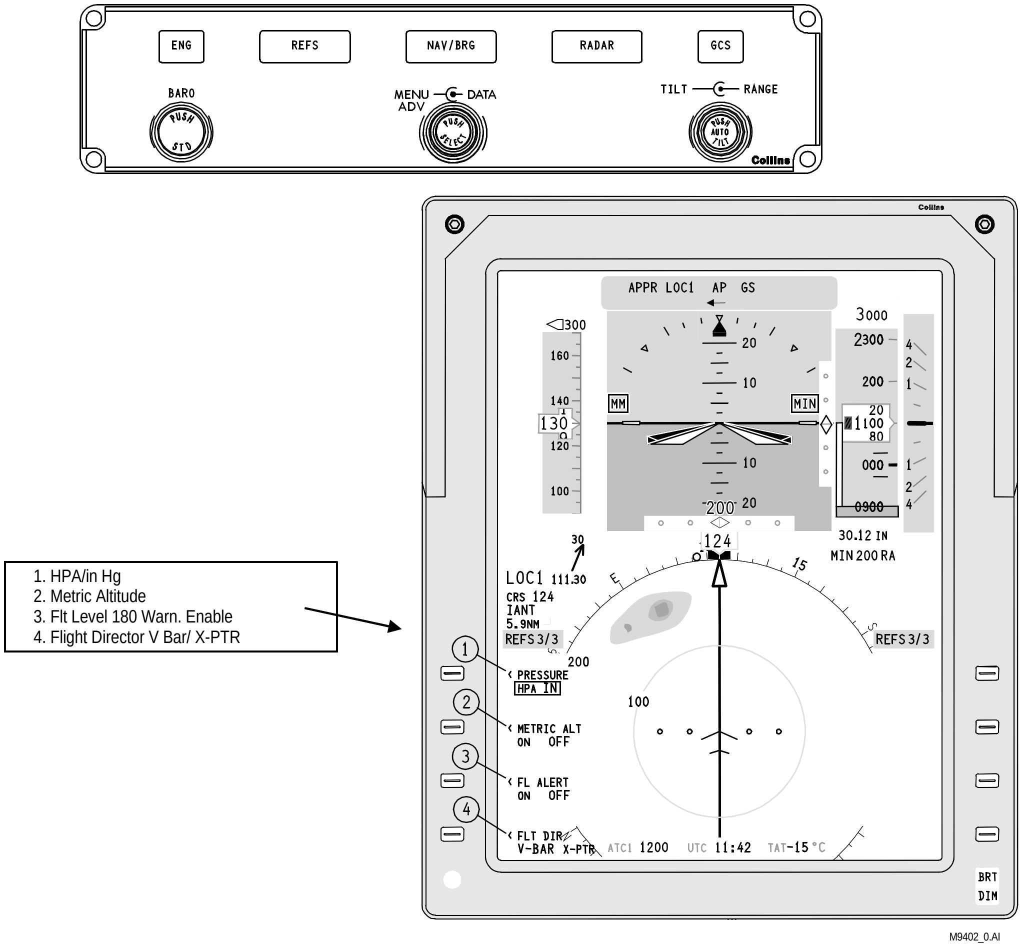
Sub-section 4.10 - NORMAL PROCEDURES (continued)

SYSTEMS DESCRIPTION (continued)

6. Display-selectable options are provided on the Primary Flight Display for selecting in/Hg, V-Bars and Metric Altitude (Figure 2).

   Three pushes of the REFS button on either pilot's Display Control Panel (DCP) will take the operator to Page 3 (with REFS 3/3) displayed on the PFD.

   Page 3 provides four selectable options, which can then be activated by pushing the bezel keys on the PFD. Selection of any option, by either pilot, will result in synchronization of the cross-side to the same selection.



Display-Selectable Options
Figure 2

CAT II is automatically activated after all requirements for a CAT II approach are met:

- RA MIN is set to less than 200 ft.
- Radio Altimeter less than 2500 ft.
- Autopilot APPR mode is armed.
- NAV 1 and NAV 2 tuned to the localizer.

Sub-section 4.10 - NORMAL PROCEDURES (continued)

SYSTEMS DESCRIPTION (continued)

7. There are three Databases within the FSU as detailed below:

Software Function	Database	Cycle Time
Electronic Charts	Charts (World Wide Coverage)	14 Days
Enhanced Map Overlays	Geographical (World Wide Coverage)	Update on Demand
	Airspace/Airways (World Wide Coverage)	28 Days 2 databases

NOTES:

1. *Due to naming conventions with the various databases, a FMS approach procedure name may match the name of several procedures in the Electronic Charts database, i.e. ILS, ILS CAT II. In a case where the FSU finds two charts that match the name of a FMS procedure, it will display "SELECT CHART" on the CHART MAIN INDEX Menu page. The pilot needs to manually select the proper procedure.*

2. *The FMS database coverage area and the airports that are available in the FMS do not correspond to the Electronic Charts coverage area and the airport charts available in the Charts database.*

8. Pilot's Interface

The pilot's interface / control with the IFIS-5000 Integrated Flight Information System features are displayed on LCD Adaptive Flight Displays (AFD) in the Multi-function display (MFD) position. The features are controlled using on-screen graphical controls (i.e. menus and data entry fields) via the Cursor Control Panel (CCP), AFD bezel push-button, and CDU.

The following are the features available through the IFIS-5000 System, which are displayed on the MFD:

- Electronic Charts
- Enhanced Map Overlays:
  Geopolitical Boundaries
  Airways (High and Low)
  Restricted, Prohibited and Controlled Airspace "B", "C", CTA, TMA, TCA

Sub-section 4.10 - NORMAL PROCEDURES (continued)

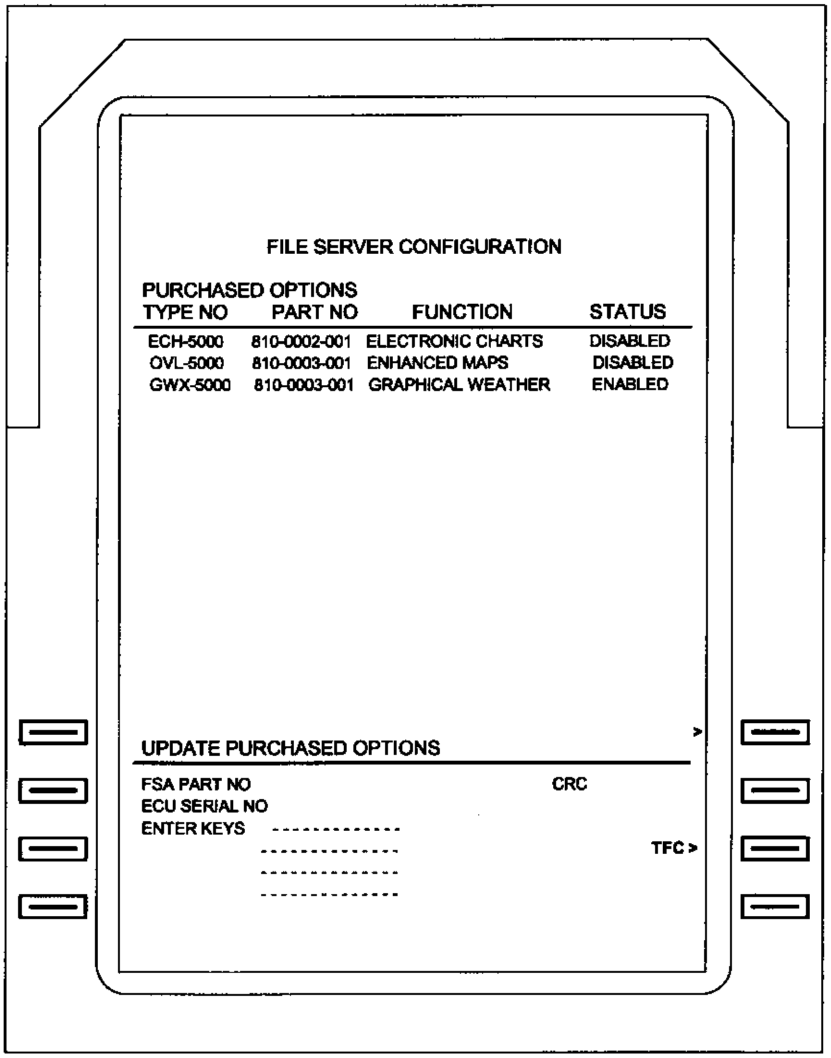
SYSTEMS DESCRIPTION (continued)

9. FSU Configuration

The FSU CONFIGURATION page is accessible from the STAT MENU:

- Push the STAT button on the CCP to show the STAT MENU on the MFD.
- Rotate the DATA Knob to select FILE SERVER CONFIGURATION.
- Push the DATA Knob to display the FILE SERVER CONFIGURATION page.

A typical FILE SERVER CONFIGURATION page is provided in Figure 3.



FILE SERVER CONFIGURATION

PURCHASED OPTIONS

TYPE NO	PART NO	FUNCTION	STATUS
ECH-5000	810-0002-001	ELECTRONIC CHARTS	DISABLED
OVL-5000	810-0003-001	ENHANCED MAPS	DISABLED
GWX-5000	810-0003-001	GRAPHICAL WEATHER	ENABLED

UPDATE PURCHASED OPTIONS

FSA PART NO CRC
ECU SERIAL NO
ENTER KEYS -------------

M9404_0.TIF

File Server Configuration Page
Figure 3

Sub-section 4.10 - NORMAL PROCEDURES (continued)

SYSTEMS DESCRIPTION (continued)

10. Configuration Information

Record the following information that was used to configure the IFIS-5000 at the time of installation. This will be helpful if customer support is required in the future.

	Left Side	Right Side
FSA Part #		
OVL Key		
ECH Key		
ECU Serial #		

Jeppesen Charts Parameters	
Subscription Number:	
Coverage Code:	

11. Chart Link Function

The chart link function will automatically load charts from the FMS flight plan provided that the airport (Origin / Destination) is supported by the chart link database. The auto-loaded charts will be displayed in magenta on the CHART MAIN INDEX Menu page.

The electronic charts for airports that are not in the chart link database but are in the Electronic Charts database must be manually selected. Manually selected charts will be displayed in cyan on the CHART MAIN INDEX Menu page.

NOTE: The Electronic Charts database may not contain all published charts.

Sub-section 4.10 - NORMAL PROCEDURES (continued)

SYSTEMS DESCRIPTION (continued)

12. Aircraft Symbol

An aircraft symbol will be displayed as an overlay on geo-referenced charts (i.e. charts that are to scale) US only. The nose of the aircraft symbol represents the position of the aircraft. The use of the aircraft symbol is for situational awareness only. The aircraft symbol position is based on the GPS position, which references WGS-84. The displayed aircraft position is based on the following:

- The accuracy of the GPS.
- The location of the GPS antenna on the airplane.
- The accuracy of the charts.

13. Enhanced Map Overlays

The Enhanced Map Overlays allow the pilot to overlay on the MFD Geopolitical Boundaries, airspace and airways. The display of the overlays is strictly for enhanced situational awareness only.

GEO-POL
Displays geopolitical boundaries (i.e. state and national boundaries, coast lines, and predominate rivers and lakes).

AIRSPACE
The airspace depicted on the MFD is displaying only the boundary (NO ALTITUDE) of Restricted, Prohibited and Class "B", "C", CTA, TMA, TCA airspace.

AIRWAYS HI
The Airways HI representation is limited to the designator of the route, intersections location (without intersection name), and lines connecting the intersections.

AIRWAYS LO
The Airways LO representation is limited to the designator of the route, intersections location (without intersection name), and lines connecting the intersections.

This application does not replace or assert primacy over existing systems. The added functionality is supplementary.

SECTION 5 - PERFORMANCE

No Change.

SECTION 6 - WEIGHT & BALANCE

No Change.

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0067
for
TAKE-OFF PERFORMANCE
UNBALANCED FIELD LENGTHS

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL

P/N 140-590032-0005

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: William Schintlach

Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 3/31/06

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0067
Original Issue
for
TAKE-OFF PERFORMANCE
UNBALANCED FIELD LENGTHS

Supplement Status	*Date*
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FAA APPROVED

AIRPLANE FLIGHT MANUAL SUPPLEMENT

P/N 140-590032-0067

Original Issue

for

TAKE-OFF PERFORMANCE

UNBALANCED FIELD LENGTHS

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INTRODUCTION

The data given in this supplement enables the maximum permissible take-off weight and the operating speeds to be calculated for the available field length. The effect of brake energy limitations can also be found.

Section 5, Sub-section 5.20 of the Airplane Flight Manual contains tabulated information which should be used with balanced field lengths.

The maximum take-off weight at a particular airfield may be further restricted by some other performance criteria, such as the WAT limit, the net take-off flight path or en-route terrain clearance requirements. The actual take-off weight may therefore have to be less than that permitted solely by consideration of the take-off field length.

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable except where superseded by the information given in this supplement.

SECTION 1 - GENERAL

No Change.

SECTION 2 - LIMITATIONS

No Change.

SECTION 3 - EMERGENCY PROCEDURES

No Change.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

No Change.

Sub-section 4.10 - NORMAL PROCEDURES

No Change.

SECTION 5 - PERFORMANCE

TAKE-OFF SPEEDS and FIELD LENGTHS

DEFINITIONS

Take-Off Distance Available

This is the length of the runway plus clearway. In this supplement, take-off distance available may be abbreviated as TODA.

Take-Off Run Available

This is the length of the runway. In this supplement, take-off run available may be abbreviated as TORA.

Accelerate-Stop Distance Available

This is the length of the runway plus stopway. In this supplement, accelerate-stop distance available may be abbreviated as ASDA.

Balanced Field Length

A balanced field length is one in which TODA and ASDA are equal in length and TODA is not critical.

Clearway

A clearway is an area beyond the runway, not less than 500 feet wide, centered on the extended center line of the runway under the control of the airport authorities.

The clearway is expressed in terms of a clearway plane, extending from the end of the runway with an upward slope not exceeding 1.25%, above which no object nor any portion of the terrain protrudes, except that threshold lights may protrude above the plane if their height above the end of the runway is not greater than 36 inches and if they are located to each side of the runway.

Stopway

A stopway is an area beyond the runway, equal to or exceeding the width of the runway, centered on the extended center line of the runway designated by the airport authorities for use in decelerating the airplane during a rejected take-off.

A stopway must be capable of supporting the airplane during a rejected take-off without inducing structural damage.

Operating Speeds

V_1
The take-off decision speed (power failure recognition speed). The scheduled take-off decision speed is not less than V_{MCG} or greater than V_R in terms of calibrated airspeed.

$V_{1\ UNC}$
Uncorrected take-off decision speed.

V_R
Rotation speed is the speed at which the pilot should initiate a change in the airplane attitude with the intention of leaving the ground. V_R is determined at low weights as 1.1 x minimum unstick speed.

For flaps up, V_R is determined at higher weights by the need to achieve V_2 at 35 feet in the event of an engine failure.

At high thrust conditions of low altitude and low temperature the minimum V_R requirements of minimum V_1 for flaps 15° or 1.05 V_{MCA} for flaps 0° are critical.

$V_{R\ UNC}$
Uncorrected rotation speed.

ASSOCIATED CONDITIONS

The performance is based on the following assumptions:

Engines	Both engines are at take-off thrust with APR armed. Failure of the critical engine occurs at V_1.
Engine Bleed Air	Air conditioning bleed off; see *NOTE 1* for the effect of engine antice bleed.
Flaps	Take-off setting, either 15° or 0°; see *NOTE 2*.
Landing Gear	UP selected after lift-off.
Runway	Hard dry runway.

NOTES:

1. *To take account of engine antice on the take-off weight, add 10° C to the actual air temperature before entering the charts.*

2. *When the takeoff is to be made with a flap setting of 15°, Figures 2 and 3 and Figures 6 thru 9 (9a-9k) are applicable. When the takeoff is to be made with flaps 0°, Figures 4 and 5 and Figures 10 thru 13 (13a-13s) are applicable.*

3. *The wind grids are factored in such a way that an effect of not more than 50% of headwinds and not less than 150% of tailwinds is obtained. Reported winds may therefore be used directly in the wind grids. When a takeoff is to be made into a headwind exceeding 40 knots, the charts are to be read at 40 knots.*

The following techniques have been assumed:

Normal Takeoff	Both engines are run up to normal take-off thrust with APR armed, and then the brakes are released. Rotation is initiated at V_R.
Engine Failure, Rejected Takeoff	Failure of one engine is recognized at V_1. Both thrust levers are closed. Maximum wheel braking using anti-skid is applied. Airbrakes are opened and the aircraft brought to a stop. *NOTE: No reduction in stopping distance is credited for the use of reverse thrust.*
Engine Failure, Continued Takeoff	Following the failure of one engine at V_1, maximum thrust is automatically set on the operating engine. Rotation is initiated at V_R; climb away is made to achieve V_2 appropriate to the flap setting at 35 feet. Landing gear is selected UP 3 seconds after lift-off.

Rolling Start Takeoffs

Where rolling start takeoffs are used, reduce all available field lengths (TORA, TODA, ASDA) by 100 feet when establishing take-off weight based on field length.

TO DETERMINE MINIMUM $V_{1\ UNC}$, $V_{R\ UNC}$ and V_2 SPEEDS:

- Determine the appropriate TAKE-OFF SPEED chart:

  FLAPS 15°, APR ON, Figures 2 and 3

  FLAPS 0°, APR ON, Figures 4 and 5

- Enter the appropriate chart with the air temperature. When engine antice is in use, enter the chart with a temperature of 10° C above the actual air temperature.
- Move to the Field Pressure Altitude and then proceed horizontally across the chart.

For Flaps 15°

Intersect the Minimum $V_{1\ UNC}$ curve (labelled MINIMUM $V_{1\ UNC}$ & MINIMUM $V_{R\ UNC}$). Move down from the intersection and read the airspeed from the MINIMUM $V_{1\ UNC}$ - scale.

Intersect either the Minimum $V_{R\ UNC}$ curve (labelled MINIMUM $V_{1\ UNC}$ & MINIMUM $V_{R\ UNC}$) or the $V_{R\ UNC}$ curve for the appropriate airplane weight. Move down from the intersection and read the airspeed from the $V_{R\ UNC}$ - scale.

Intersect either the Minimum V_2 curve (labelled MINIMUM V_2) or the V_2 curve for the appropriate airplane weight. Move down from the intersection and read the airspeed from the V_2 - KIAS scale.

For Flaps 0°

Intersect the Minimum $V_{1\ UNC}$, MINIMUM $V_{R\ UNC}$ and MINIMUM V_2 curves and in each case move down to read the speed from the bottom scale.

From the intersection of the air temperature with Field Pressure Altitude, proceed horizontally across the chart to intersect the take-off weight in the $V_{R\ UNC}$ and V_2 grids. In both cases, move vertically from the intersection to the reference line at the bottom of the chart.

From the reference line, move parallel to the guidelines to the required Field Pressure Altitude and then read $V_{R\ UNC}$ and V_2 from the scales at the bottom of the chart.

If the values of $V_{R\ UNC}$ and V_2 are less than the values of Minimum $V_{R\ UNC}$ and Minimum V_2 then the Minimum $V_{R\ UNC}$ and Minimum V_2 values must be used.

INSTRUCTIONS FOR USE OF CHARTS

- Enter Figure 6 (Flaps 15°) or Figure 10 (Flaps 0°) on the left side of the chart for TAKE-OFF DISTANCE AVAILABLE and proceed to the reference line of the RUNWAY SLOPE - %.
- Follow the guidelines to the appropriate gradient and continue similarly through the wind correction grid.
- Enter again with the ACCELERATE-STOP DISTANCE AVAILABLE at the bottom of the chart and proceed upwards through the gradient and wind grids to meet the line obtained from the take-off distance available.
- At the point where the two lines cross, read the value of D and $V_{1\ UNC}/V_{R\ UNC}$. D is the equivalent balanced field length, zero wind and gradient, which would allow the same take-off weight as the actual distances available. The value of $V_{1\ UNC}/V_{R\ UNC}$ is the optimum value for these distances, i.e., that which allows the highest take-off weight.
- If the intersection point falls among the horizontal lines on the right of the grid, $V_{1\ UNC}$ is equal to $V_{R\ UNC}$.
- If take-off run available is less than the take-off distance available, enter Figure 7 (Flaps 15°) or Figure 11 (Flaps 0°) with take-off run on the left side and obtain D and $V_{1\ UNC}/V_{R\ UNC}$ as before. If the take-off run is not less than take-off distance, this step is not necessary.
- Enter Figure 8 (Flaps 15°) or Figure 12 (Flaps 0°) to obtain D values based on the take-off distance and take-off run with all engines operating.
- The lowest value of the four values of D obtained is the critical value which must be used to determine the take-off weight.

Figures 9a thru 9k (Flaps 15°) and Figures 13a thru 13s (Flaps 0°) present weight versus temperature and altitude for a range of values of D at 500 ft intervals.

- Select the closest value above (D_A) and below (D_B) the critical value D.
- Using the corresponding D_A and D_B values, enter the two charts at the bottom with air temperature. Move up to the field pressure altitude and then proceed horizontally to read weights W_A (for D_A) and W_B (for D_B) from the scales at the right.
- Determine the weight for the critical value of D by interpolation between W_A and W_B using the following formula:-

$$W = W_B + \left[\left(\frac{D - D_B}{500}\right) \times \left(W_A - W_B\right)\right]$$

where D is the critical value of D

- The value of $V_{1\ UNC}/V_{R\ UNC}$ to be used is that obtained from the chart which gave the lowest value of D. If the lowest value of D came from Figure 8 or Figure 12, then use $V_{1\ UNC}/V_{R\ UNC}$ from the chart which gave the lowest value of D which did have an associated value of $V_{1\ UNC}/V_{R\ UNC}$.
- Having obtained $V_{R\ UNC}$ from Figure 2 or Figure 4, use Figure 15 to determine $V_{1\ UNC}$.
- Provided the $V_{1\ UNC}$ speed is not less than the minimum $V_{1\ UNC}$ and the maximum brake energy limit has not been exceeded, then the take-off weight determined will be the maximum take-off weight for the field length available and the $V_{1\ UNC}$ speed is the optimum value.
- If the $V_{1\ UNC}$ speed determined above is less than the minimum $V_{1\ UNC}$, then reduce take-off distance available by an arbitrary amount (approximately 500 ft), keeping ASDA constant, and repeat the take-off calculation until a value of $V_{1\ UNC}$ is obtained which is not less than the minimum.
- The accelerate-stop distance appropriate to the maximum emergency brake energy capacity is shown on Figure 14. If the accelerate-stop distance used to determine take-off weight was longer than this maximum, then the brake capacity would be exceeded and the maximum take-off weight should be determined as described in Example 2.

Correcting $V_{1\ UNC}$ and $V_{R\ UNC}$

Correct $V_{1\ UNC}$ and $V_{R\ UNC}$ to obtain V_1 and V_R by using Figure 16.

Examples for Use of Charts

Example 1

Determine the maximum take-off weight for the following conditions:

Field pressure altitude	6000 feet
Air temperature	9° C
Wind component	20 knots headwind
Runway gradient	1% uphill
Runway surface	Hard dry surface
Take-off distance available	5900 feet
Take-off run available	5500 feet
Accelerate-stop distance available	5500 feet
Flap setting	0°

- Using the take-off distance and the accelerate-stop distance available, Figure 10 gives the values of D as 5770 feet and $V_{1\ UNC}/V_{R\ UNC}$ as 0.938.
- Using the take-off run and the accelerate-stop distance available, Figure 11 gives the values of D as 5790 feet and $V_{1\ UNC}/V_{R\ UNC}$ as 0.937.
- Using the take-off distance and the take-off run available, Figure 12 gives the values of D as 6230 feet for TODA and 6100 feet for TORA.
- The lowest value of D is 5770 feet and the two nearest values from Figures 13a thru 13s are those above it (D_A = 6000 on Figure 13 g) and below it (D_B = 5500 on Figure 13 f).
- From Figure 13 g read W_A = 24,970 lb.
- From Figure 13 f read W_B = 23,900 lb.
- Calculate $W = 23{,}900 + \left[\left(\frac{5770 - 5500}{500}\right) \times \left(24{,}970 - 23{,}900\right)\right]$

  $= 24{,}477$ lb
- From Figure 4, $V_{R\ UNC}$ at 24,477 lb is 132 knots and V_2 is 132 KIAS, and both $V_{R\ UNC}$ and V_2 are higher than the minimum values.
- The value of $V_{1\ UNC}/V_{R\ UNC}$ corresponding to the lowest value of D is 0.938 so $V_{1\ UNC}$ is 137 x 0.938 = 124 knots.

- The maximum take-off weight limited by field length with Flaps 0° is therefore 24,477 lb, provided the brake energy limit is not exceeded and $V_{1\ UNC}$ is not below minimum $V_{1\ UNC}$.
- From Figure 14 it can be seen that the accelerate-stop distance for maximum brake energy would be 10,800 feet at a weight of 24,477 lb in the conditions of this example.

  This greatly exceeds the 5500 feet available and the maximum brake energy limit is therefore not exceeded.
- From Figure 4 minimum $V_{1\ UNC}$ = 112 knots which is less than the value of $V_{1\ UNC}$ calculated.
- Enter Figure 16 with $V_{1\ UNC}$ of 124 knots to obtain a correction of -2 knots, resulting in a V_1 of 122 KIAS.
- Enter Figure 16 with $V_{R\ UNC}$ of 132 knots to obtain a correction of -2 knots, resulting in a V_R of 130 KIAS.

Example 2
Effect of Brake Energy Limitations:

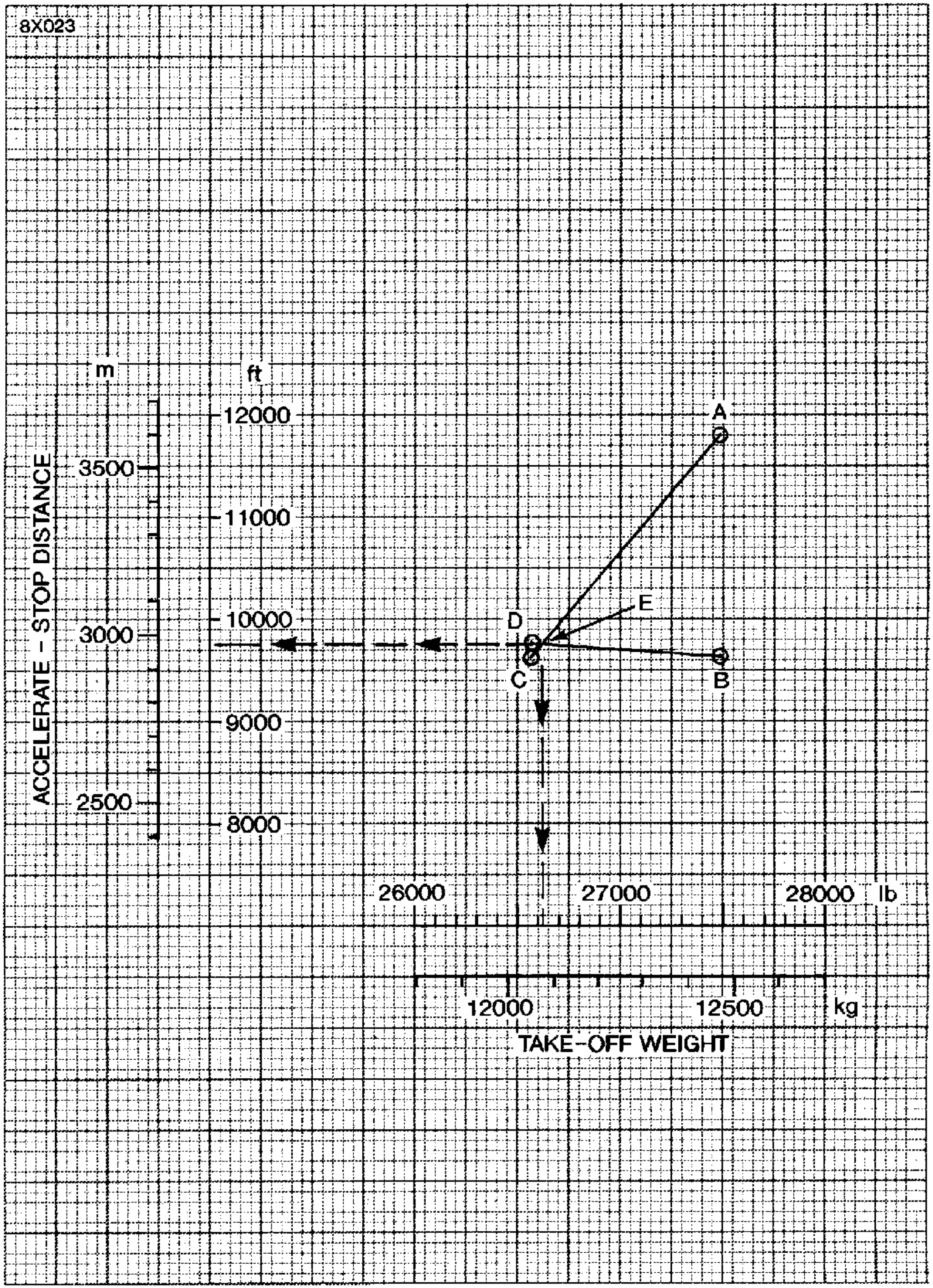
Field pressure altitude	7000 feet
Air temperature	20° C
Wind component	10 knots tailwind
Runway gradient	Level
Runway surface	Hard dry surface
Take-off distance available	11,500 feet
Take-off run available	11,500 feet
Accelerate-stop distance available	11,800 feet
Flap setting	0°

It is necessary to make a plot of accelerate-stop distance against take-off weight (see Figure 1):

- First go through Figures 6 thru 9 (9a-9k) in the usual way with the available distances to find a value of D and take-off weight - in this case D = 9900 feet and TOW = 27,490 lb.
- Plot this take-off weight against the accelerate stop distance used in finding it (point A).
- Enter Figure 14 with this take-off weight and the appropriate altitude, temperature, wind and gradient and extract the maximum accelerate-stop distance = 9630 feet (this is the accelerate-stop distance at which the energy input to the brakes is the maximum permissible). Plot this distance at point B.

If point B is higher than point A, brake energy is not limiting. However, if B is below A, then brake energy is limiting and weight must be reduced as follows:

- Using the accelerate-stop distance of point B, and the original take-off run and distance, repeat this first process to find D = 8580 and weight = 26,564 lb (point C).
- Using this weight, go through Figure 14 again to find a new maximum accelerate-stop distance = 9770 feet (point D).
- The final take-off weight is then shown by the intersection of AC and BD (point E), which gives 26,620 lb. Point E also shows that the maximum accelerate-stop distance allowable without exceeding the brake energy capacity is 9760 feet.
- Using this accelerate-stop distance, enter Figure 6, 7, 10 or 11, as appropriate, to extract a value of $V_{1\ UNC}/V_{R\ UNC}$ and therefore find $V_{1\ UNC}$ as usual.



Example 2 - Take-off Weight Limited by Brake Energy Capacity
Figure 1

SLIPPERY RUNWAY SURFACES

The field length data in Figures 6 thru 9 (9a-9k) is based on a hard dry paved surface. However the effect of a slippery surface is given for information. A slippery surface with a coefficient of friction of 0.05 will greatly increase the accelerate-stop distance required.

In order that the distance on a slippery runway should not exceed the distance available, the stopping speed should be 40 KIAS lower than the V_1 obtained from the graphs for a dry surface. This 40 knots reduction from V_1 is valid for a runway with approximately zero gradient and no tailwind. Take-off downhill or with a tailwind on a slippery runway should be avoided if possible.

The limiting combinations of wind and runway gradient for which the 40 KIAS reduction from V_1 is valid are shown on Figure 17. Combinations of wind and gradient lying in the shaded area are not permitted.

NOTE: The 40 KIAS slower stopping speed is not a V_1 but a speed from which the airplane can be stopped within the accelerate-stop distance available.

$V_{1\ UNC}$ AT REDUCED WEIGHT

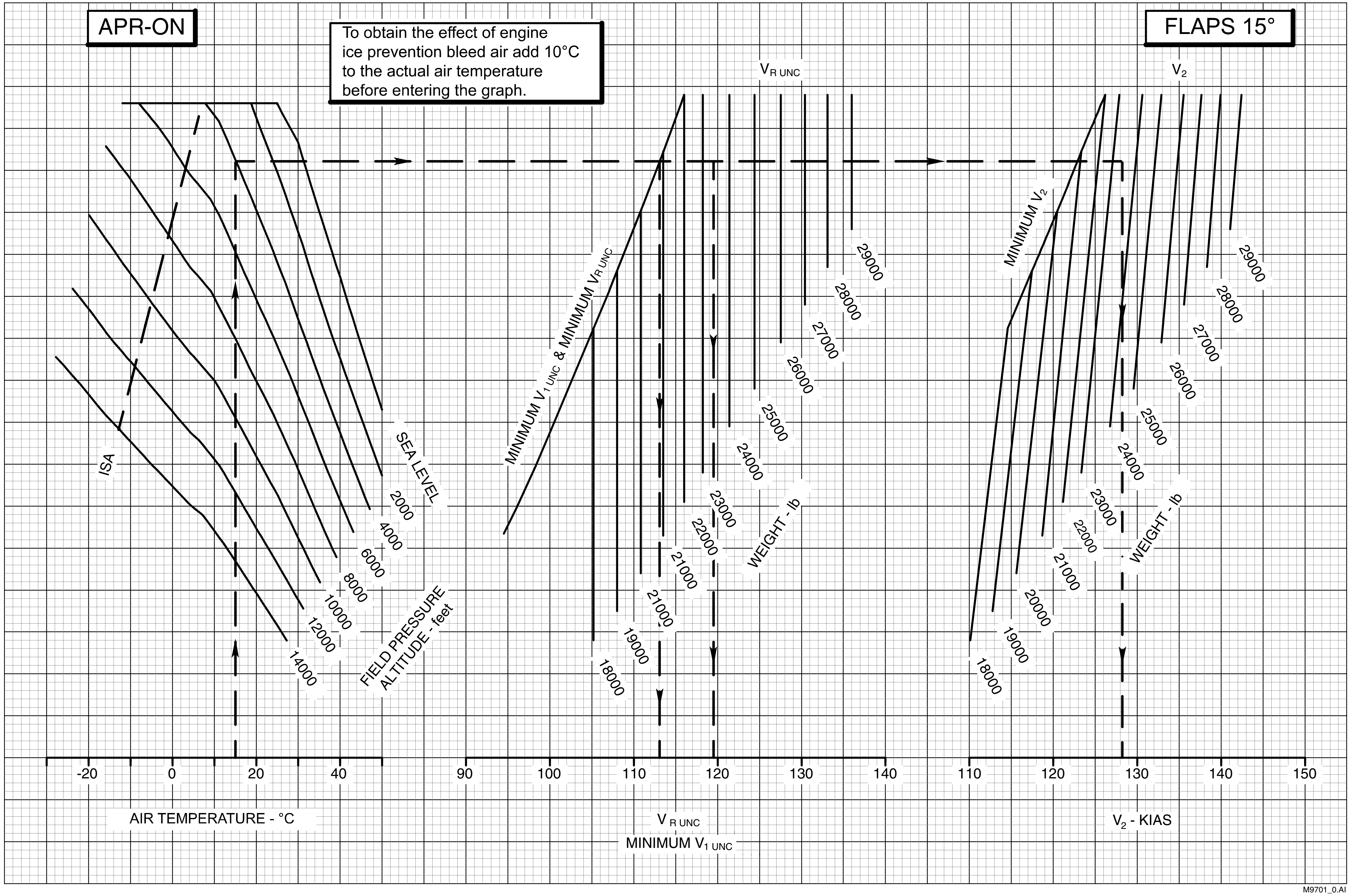
The previously described method gives $V_{1\ UNC}$ for the maximum permissible weight for the runway. When the required weight is below the maximum, a range of $V_{1\ UNC}$ can safely be used.

Either of the following rules may be used to give a $V_{1\ UNC}$ within the safe range:

- Use the same $V_{1\ UNC}/V_{R\ UNC}$ as for maximum permissible weight, provided that $V_{1\ UNC}$ is not less than minimum $V_{1\ UNC}$.
- If a higher value is desired, use the same $V_{1\ UNC}$ as for maximum permissible weight provided that it does not exceed $V_{R\ UNC}$ for the actual weight.

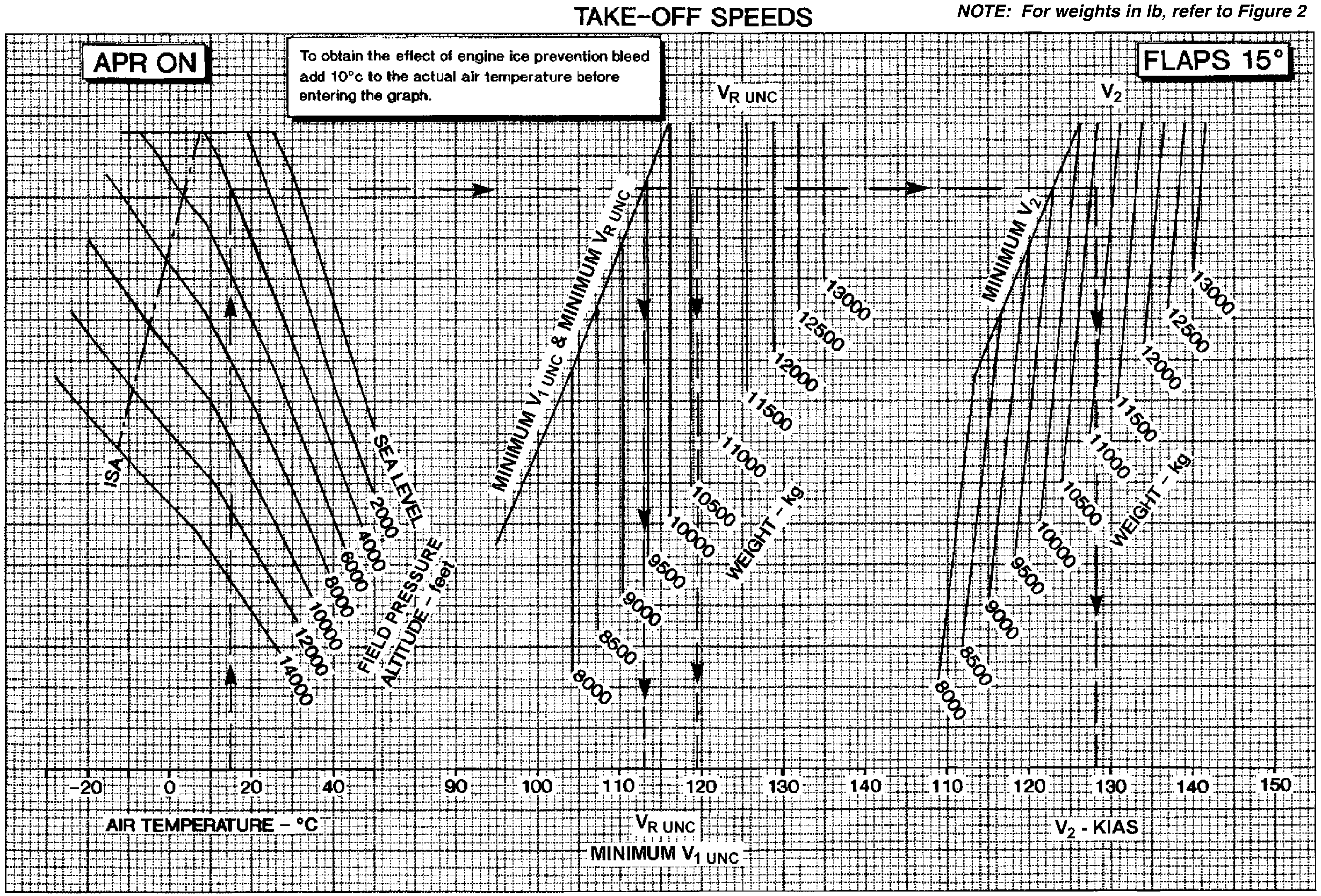
TAKE-OFF SPEEDS

NOTE: For weights in kg, refer to Figure 3



Take-off Speeds Flaps 15° APR ON (weights in lb)
Figure 2

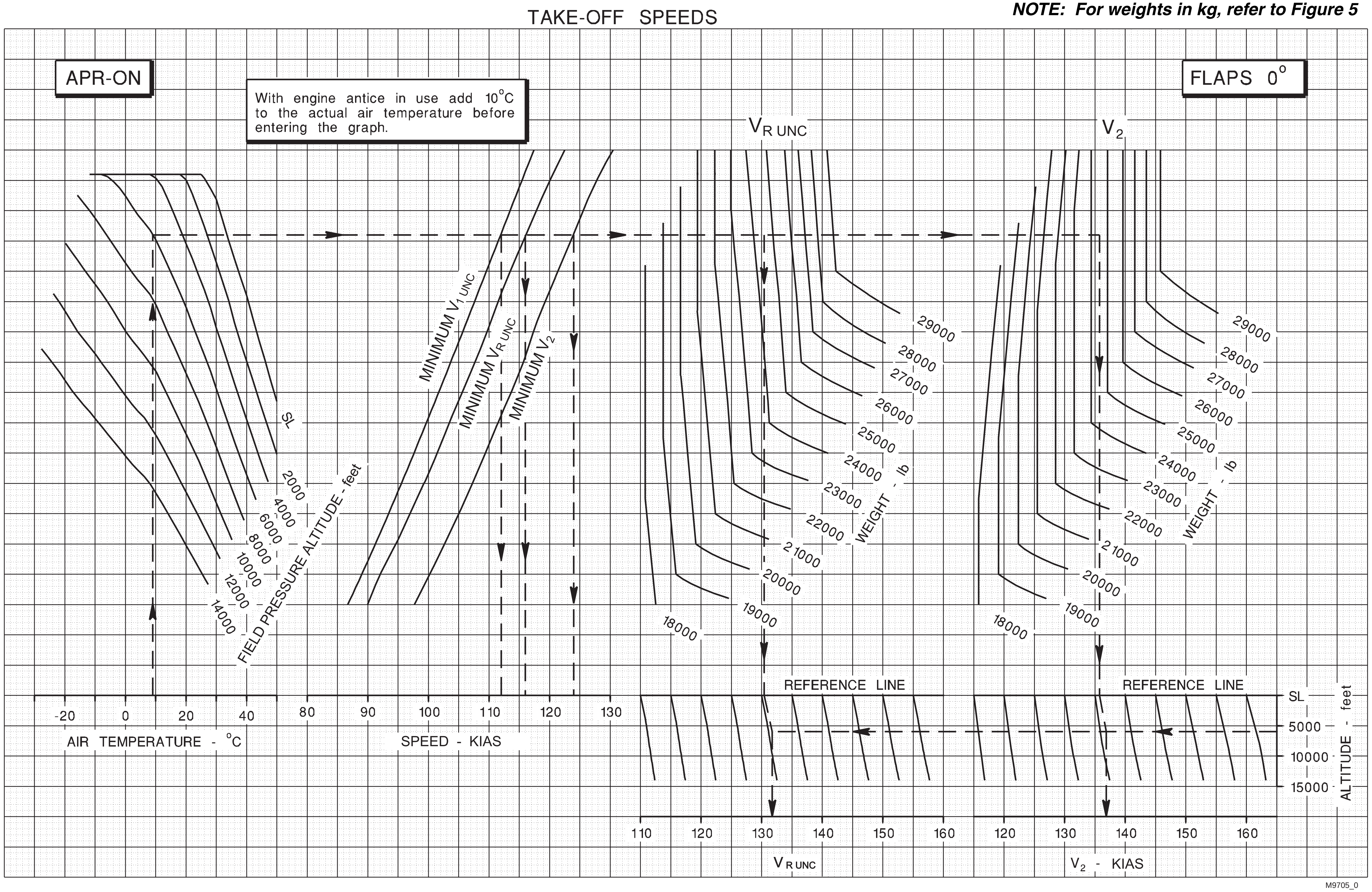
NOTE: For weights in lb, refer to Figure 2



To obtain the effect of engine ice prevention bleed add 10°c to the actual air temperature before entering the graph.

Take-off Speeds Flaps 15° APR ON (weights in kg)
Figure 3

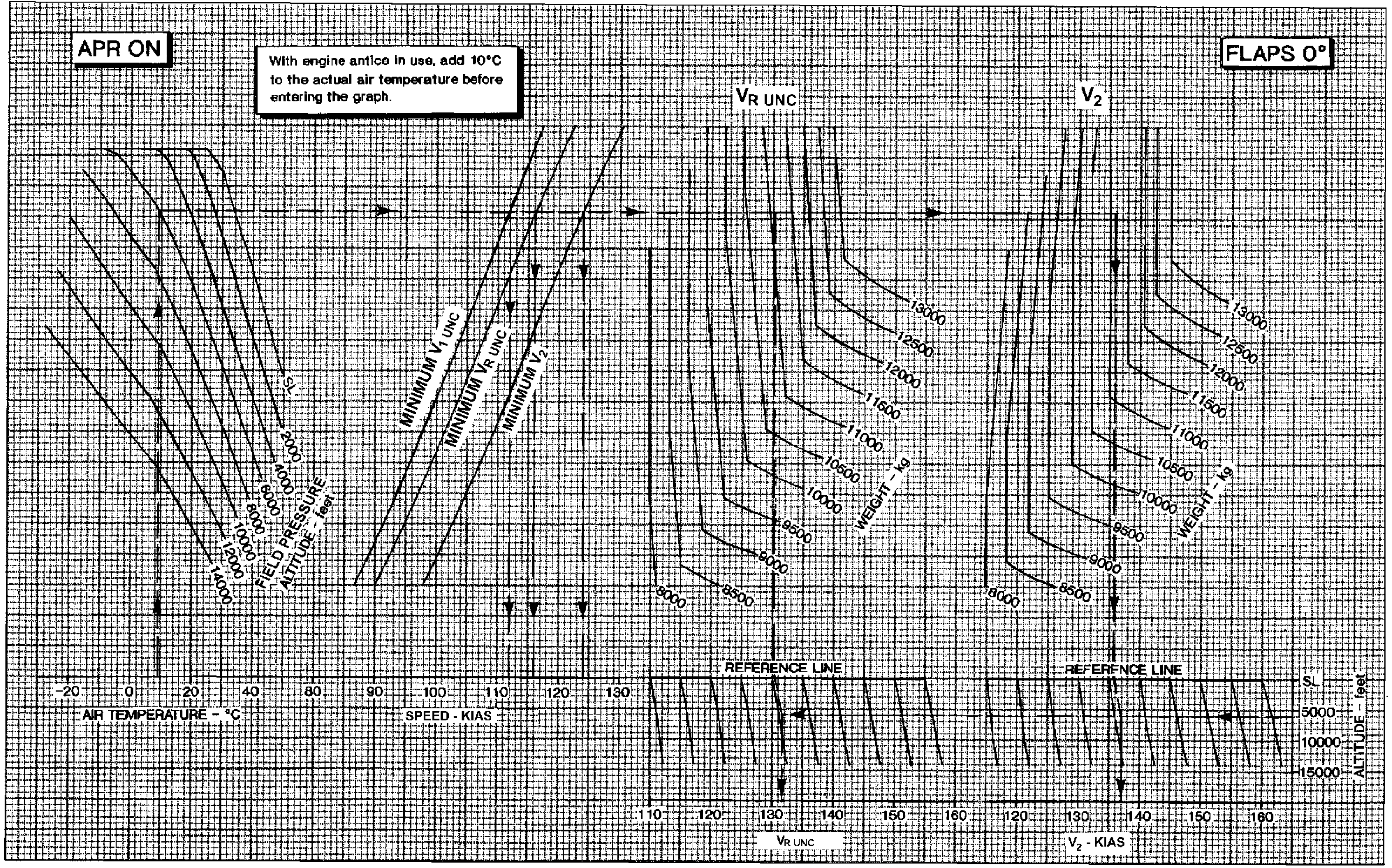
NOTE: For weights in kg, refer to Figure 5



Take-off Speeds Flaps 0° APR ON (weights in lb)
Figure 4

TAKE-OFF SPEEDS

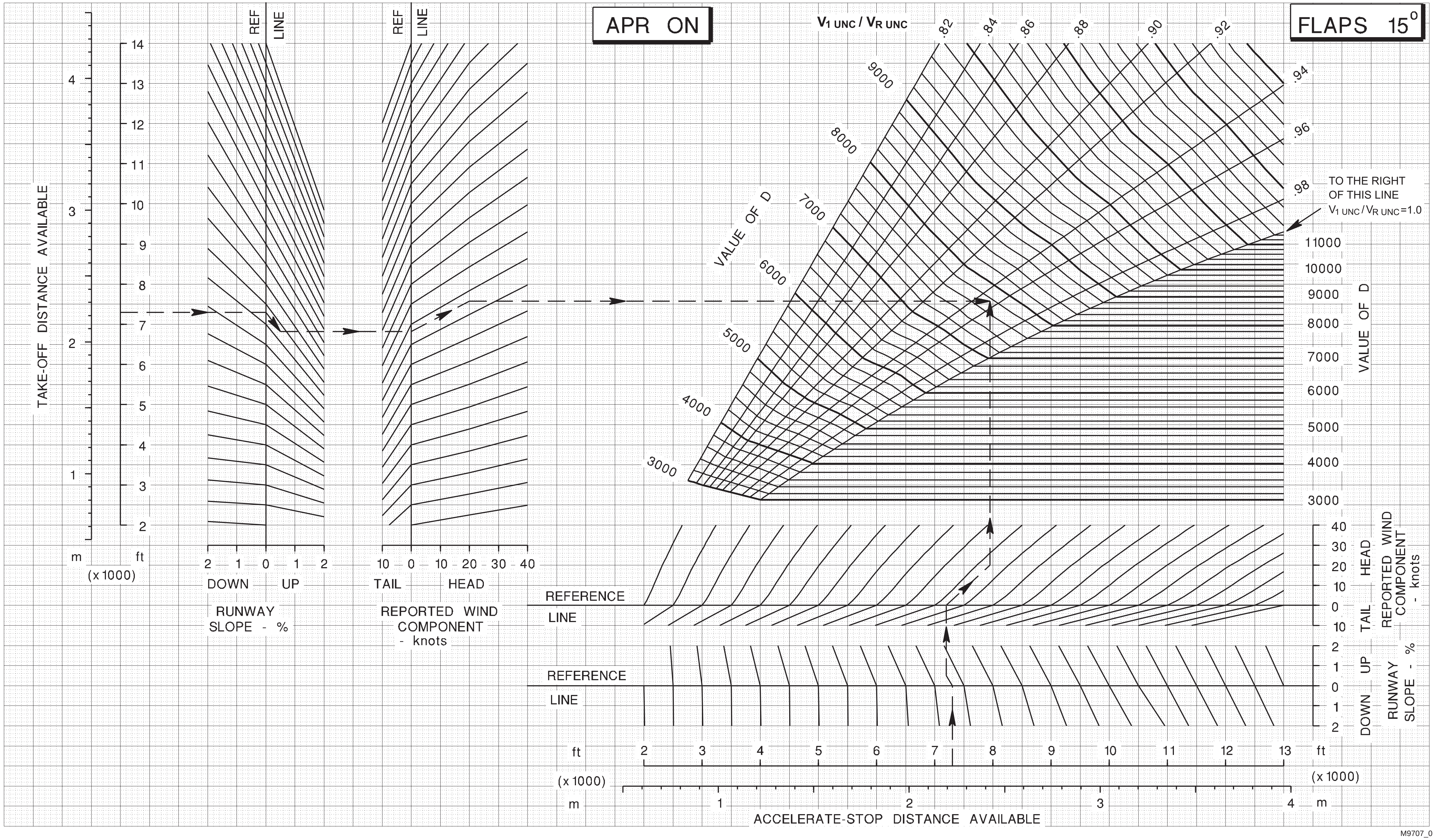
NOTE: For weights in lb, refer to Figure 4



With engine antice in use, add 10°C to the actual air temperature before entering the graph.

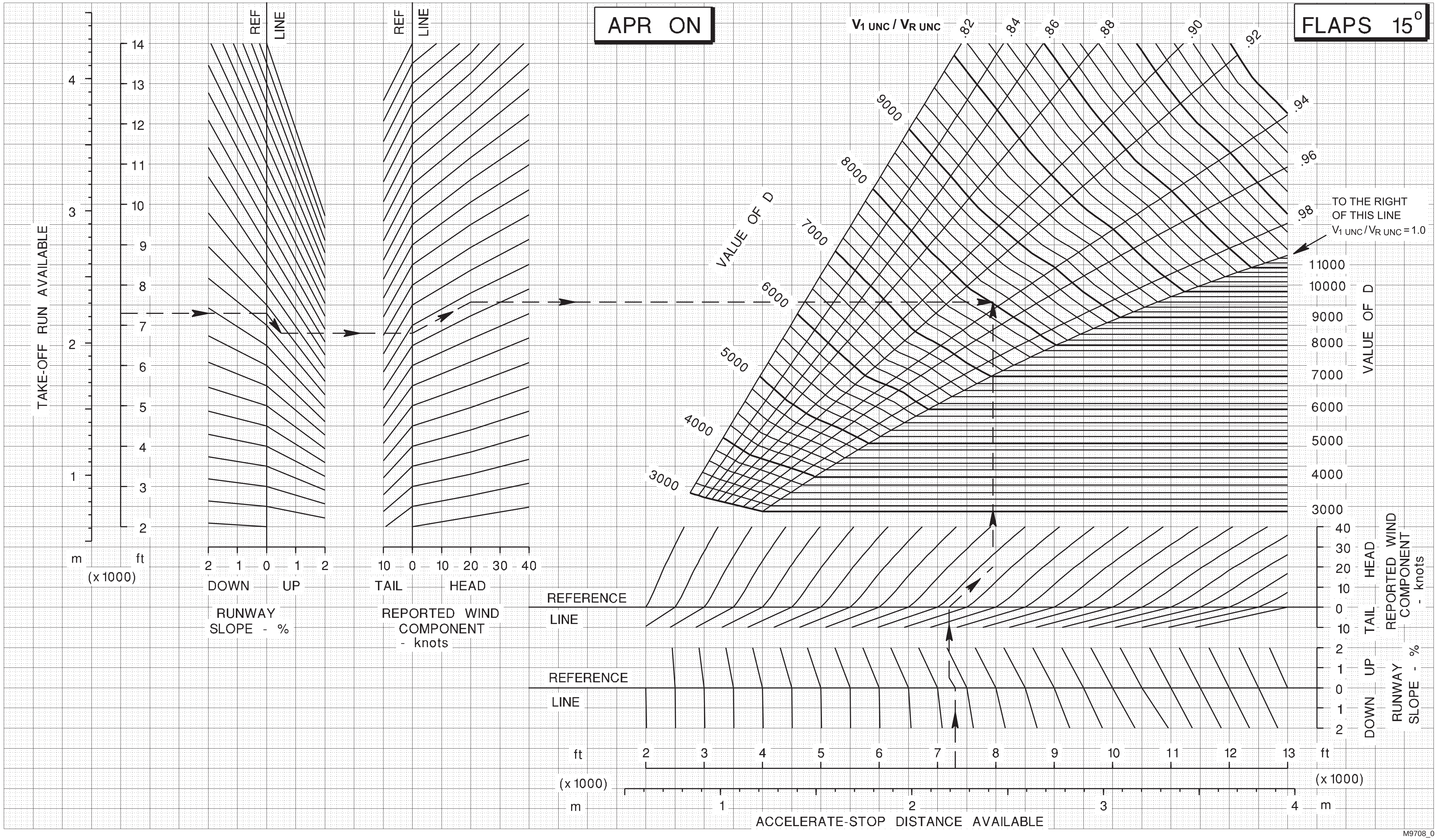
Take-off Speeds Flaps 0° APR ON (weights in kg)
Figure 5

VALUE OF 'D' AND $V_{1\ UNC}$ / $V_{R\ UNC}$ - TAKE-OFF DISTANCE AND ACCELERATE-STOP DISTANCE AVAILABLE

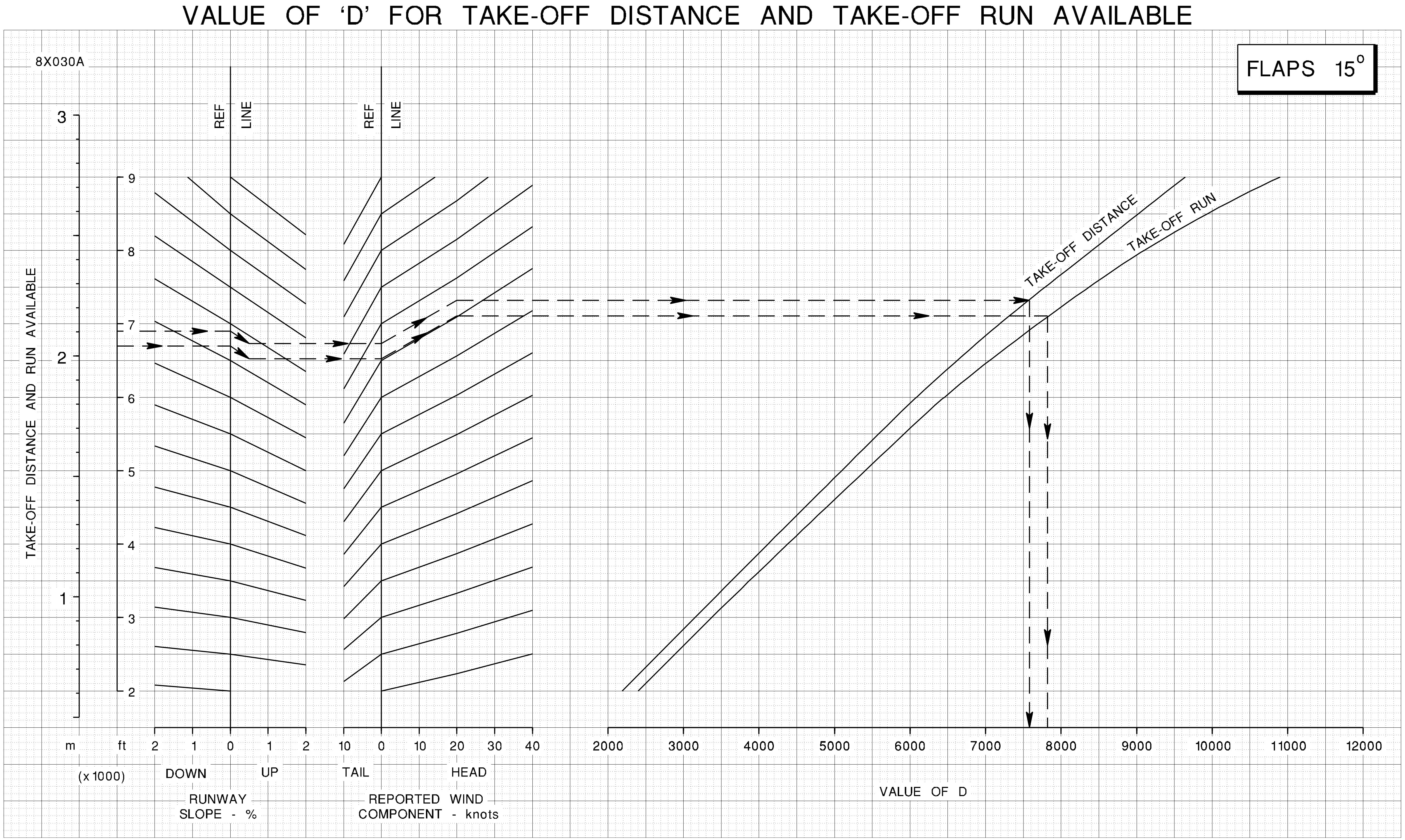


Value of D and $V_{1\ UNC}$/$V_{R\ UNC}$ - Take-off Distance and Accelerate-Stop Distance Available (Flaps 15°)
Figure 6

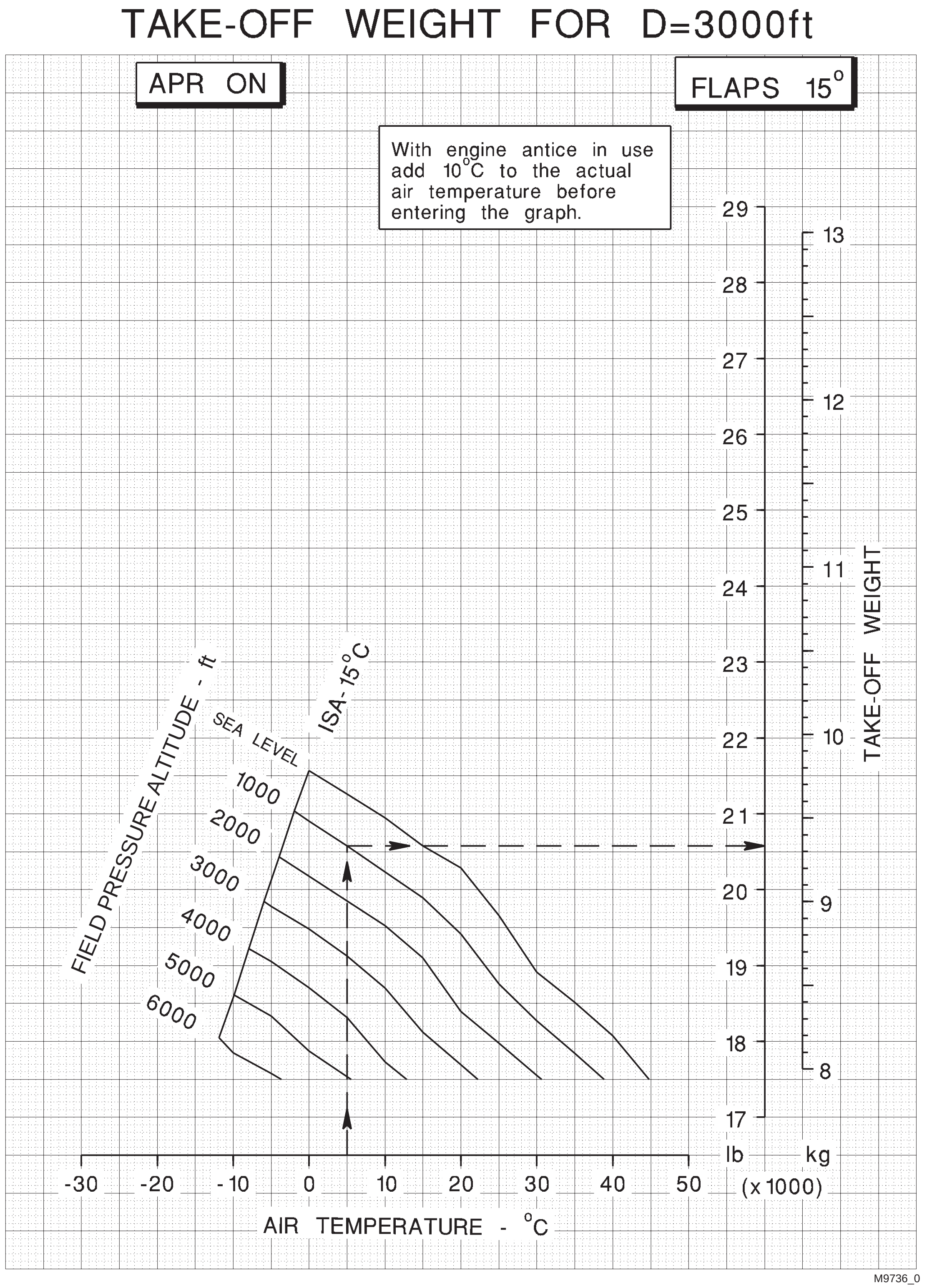
VALUE OF 'D' AND $V_{1\ UNC}$ / $V_{R\ UNC}$ - TAKE-OFF RUN AND ACCELERATE-STOP DISTANCE AVAILABLE



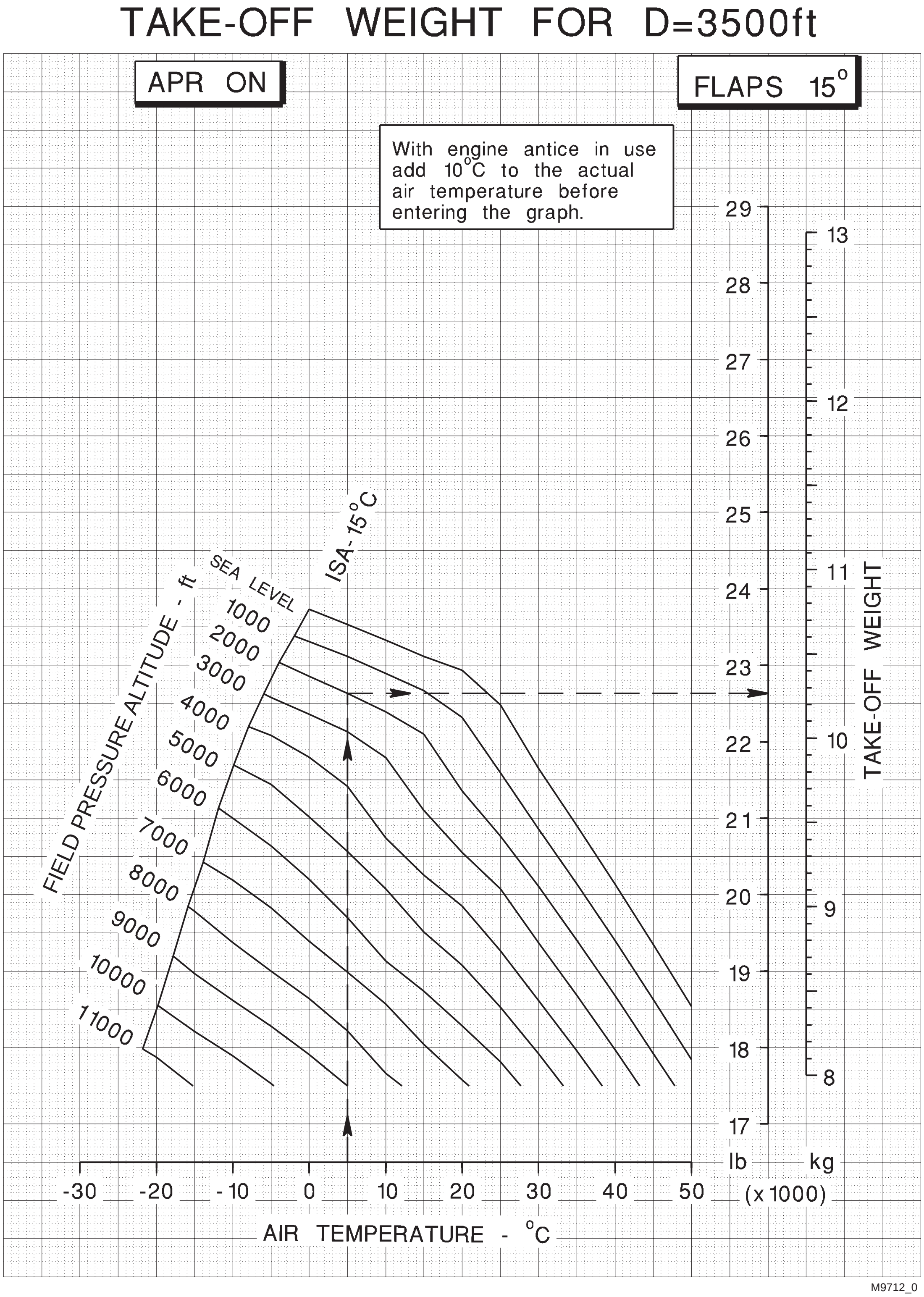
Value of D and $V_{1\ UNC}$/$V_{R\ UNC}$ - Take-off Run and Accelerate-Stop Distance Available (Flaps 15°)
Figure 7



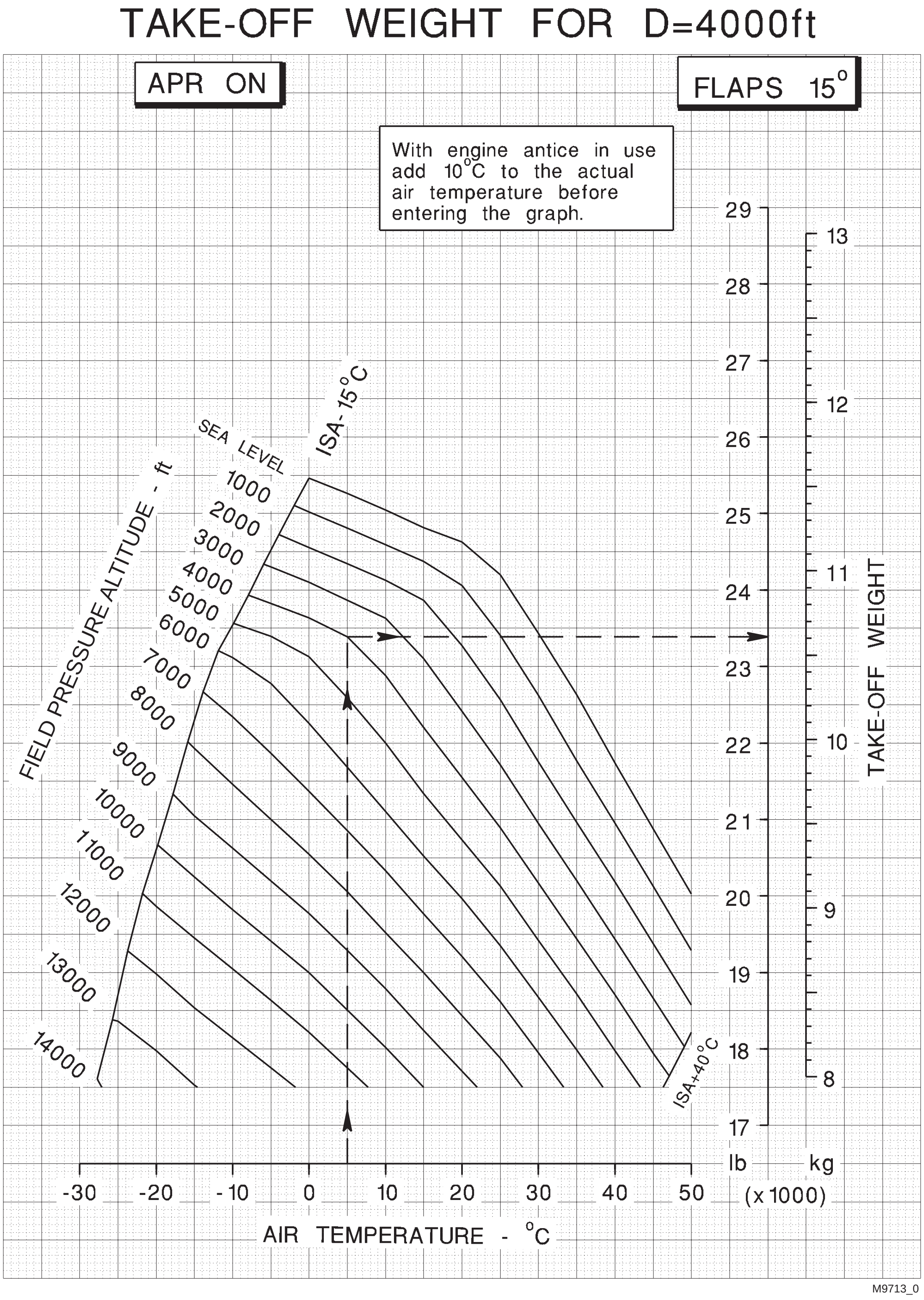
Value of D for Take-off Distance and Take-off Run Available (Flaps 15°)
Figure 8



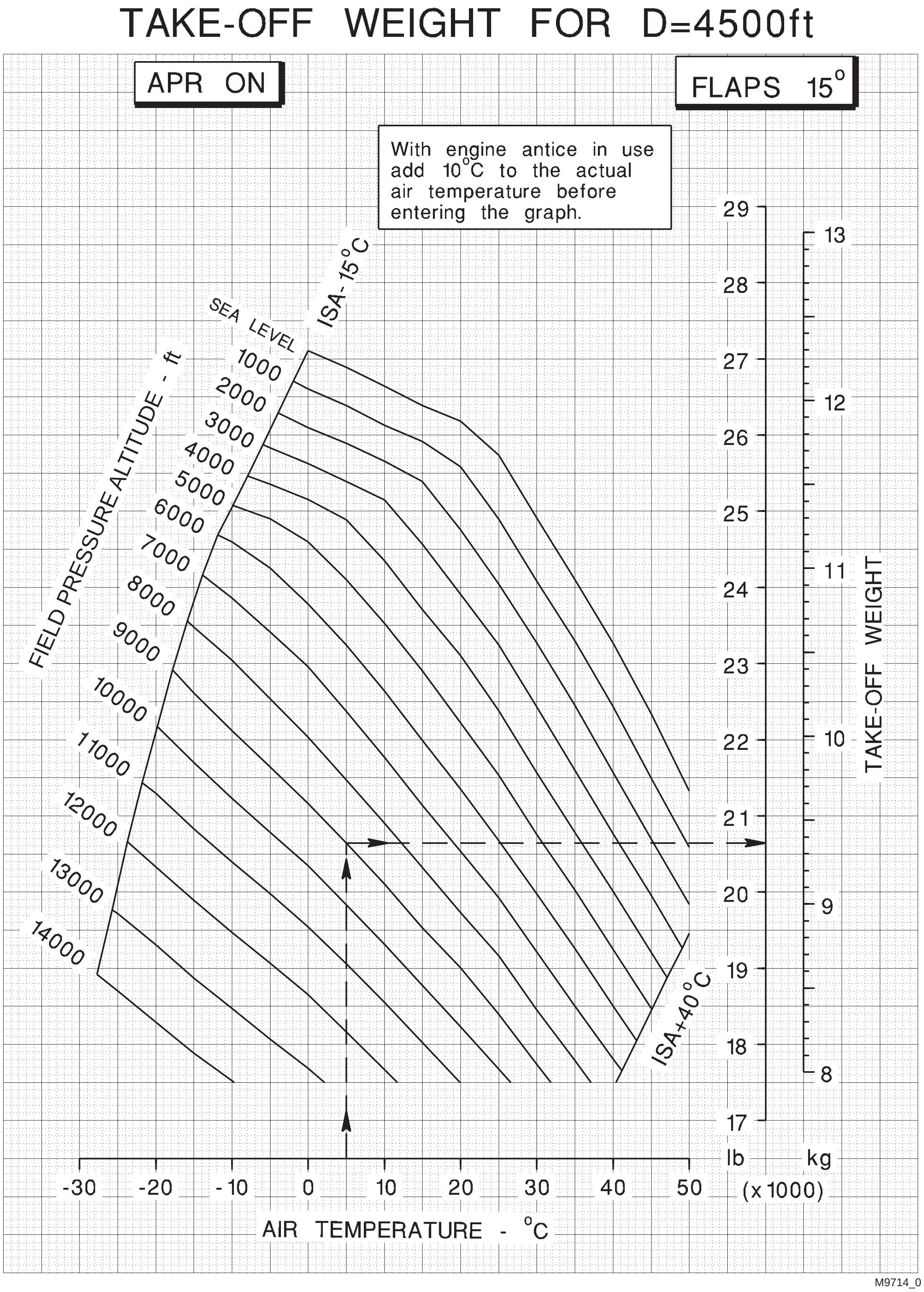
Take-off Weight for D = 3000 ft (Flaps 15°)
Figure 9a



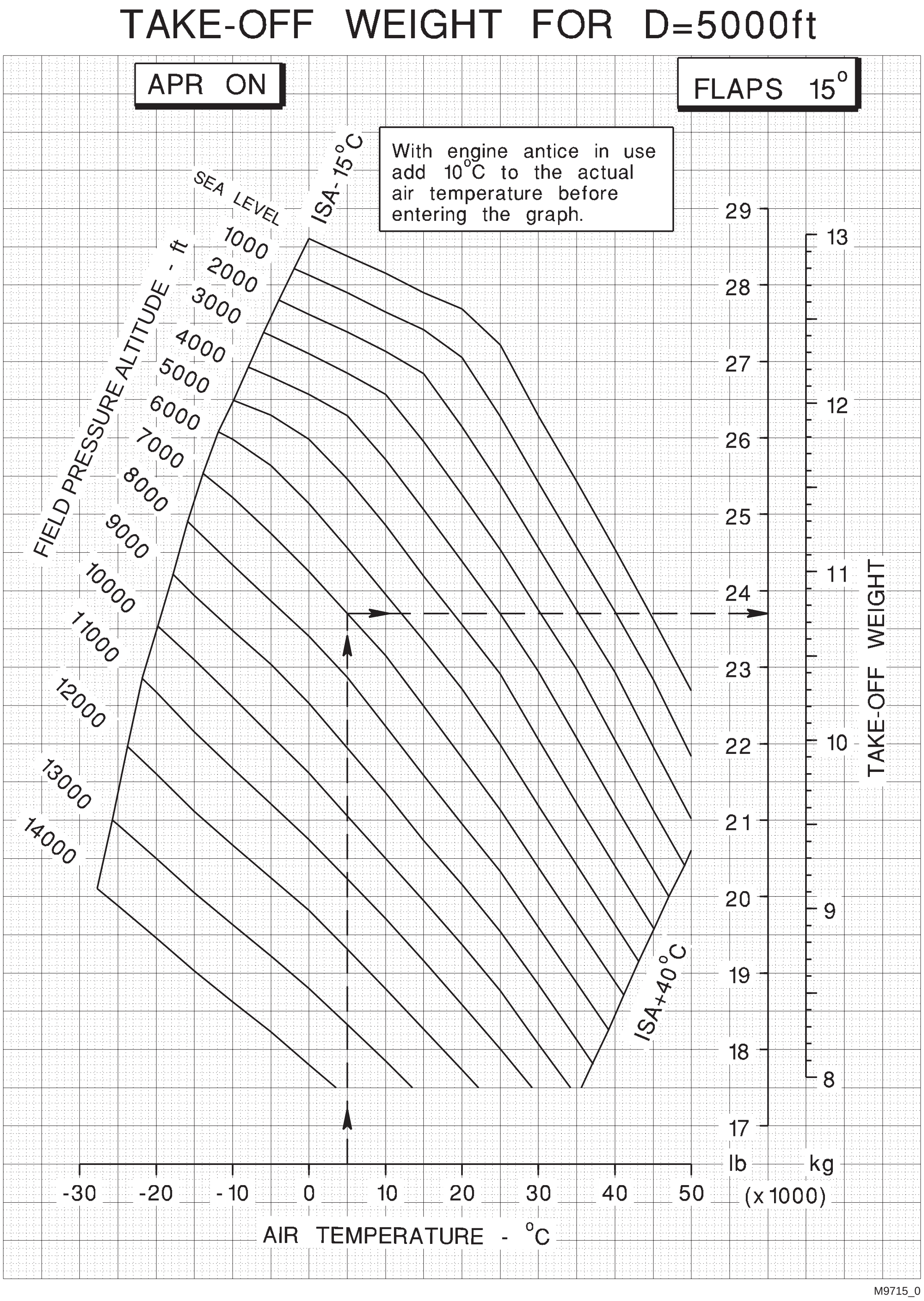
Take-off Weight for D = 3500 ft (Flaps 15°)
Figure 9b



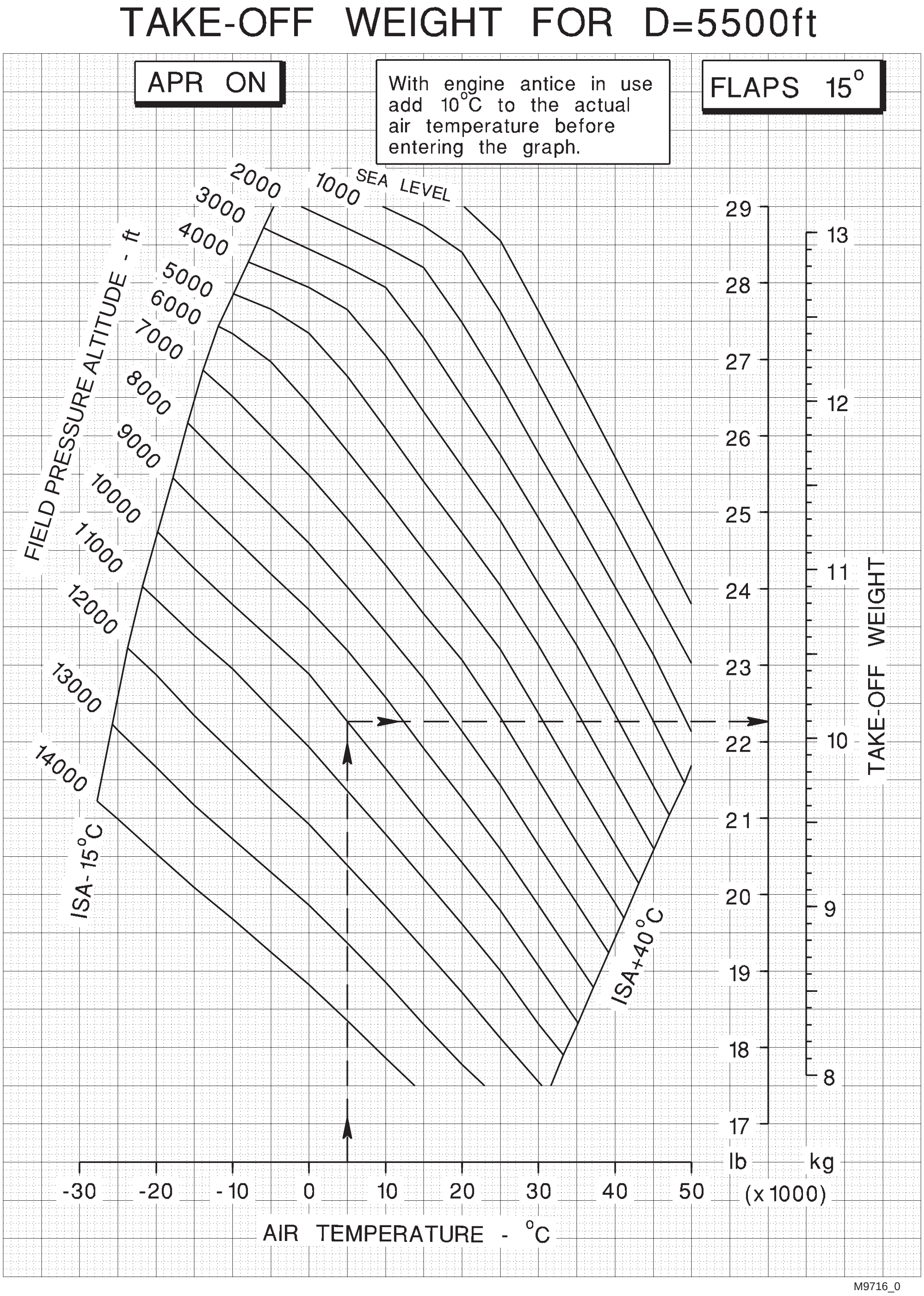
Take-off Weight for D = 4000 ft (Flaps 15°)
Figure 9c



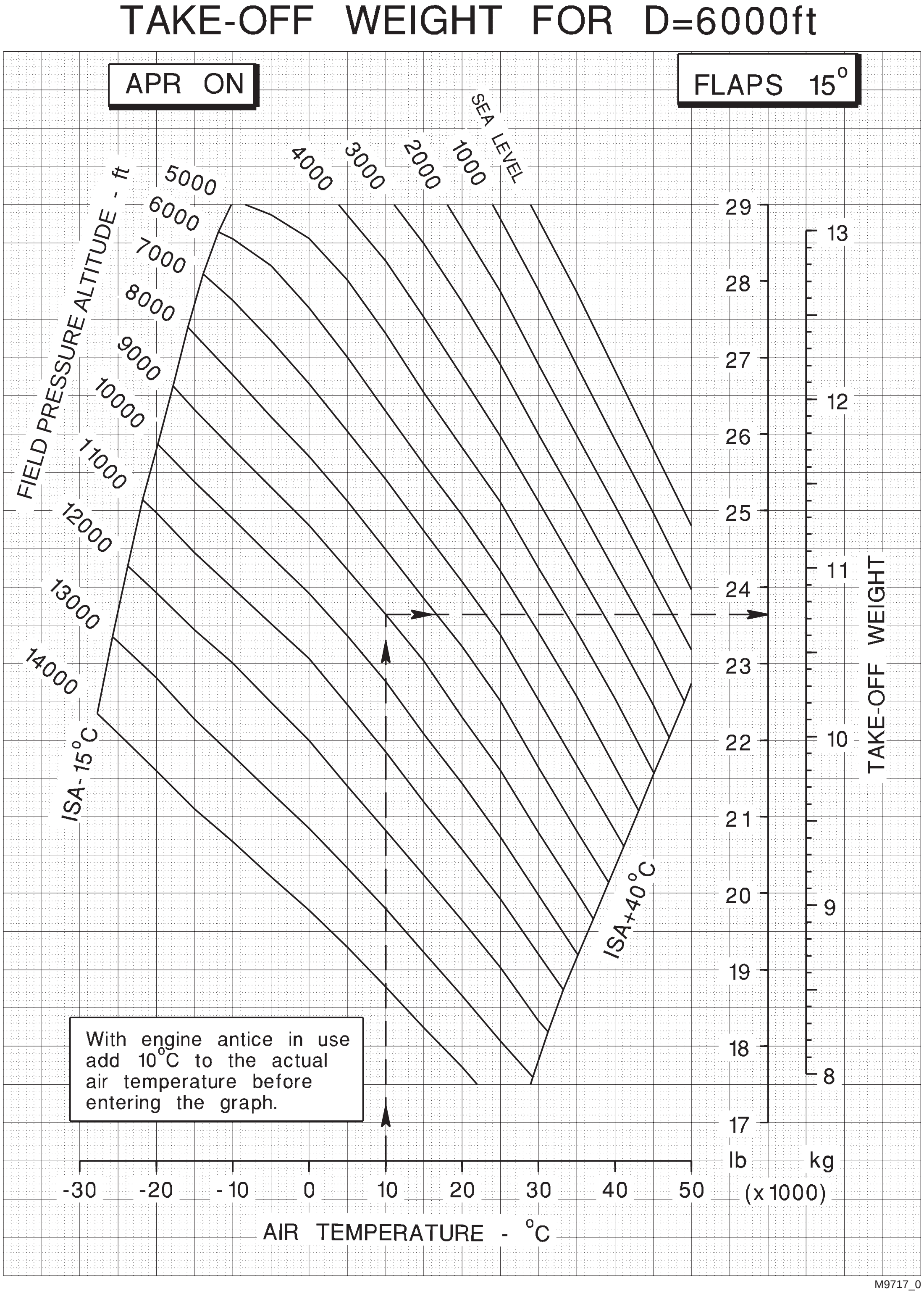
Take-off Weight for D = 4500 ft (Flaps 15°)
Figure 9d



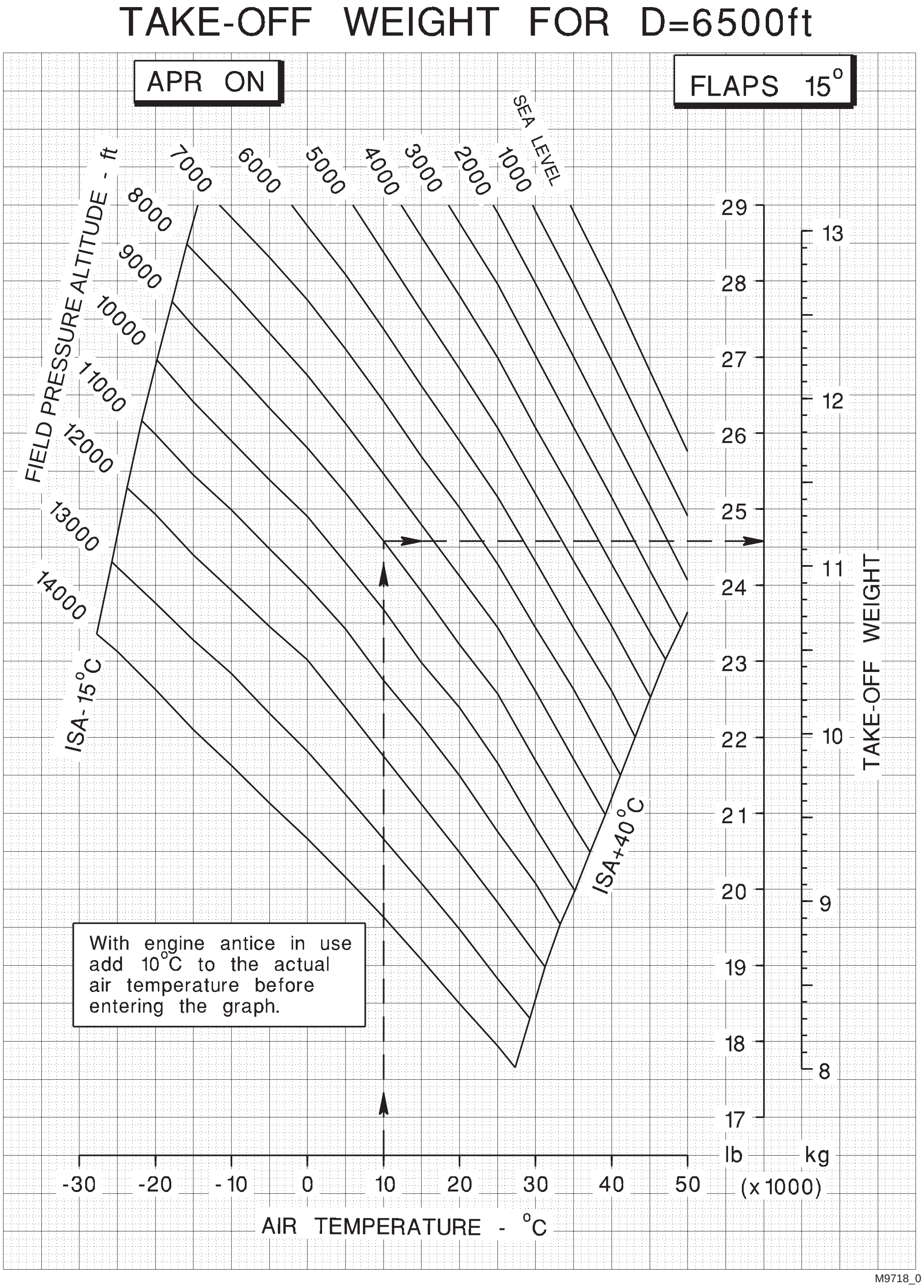
Take-off Weight for D = 5000 ft (Flaps 15°)
Figure 9e



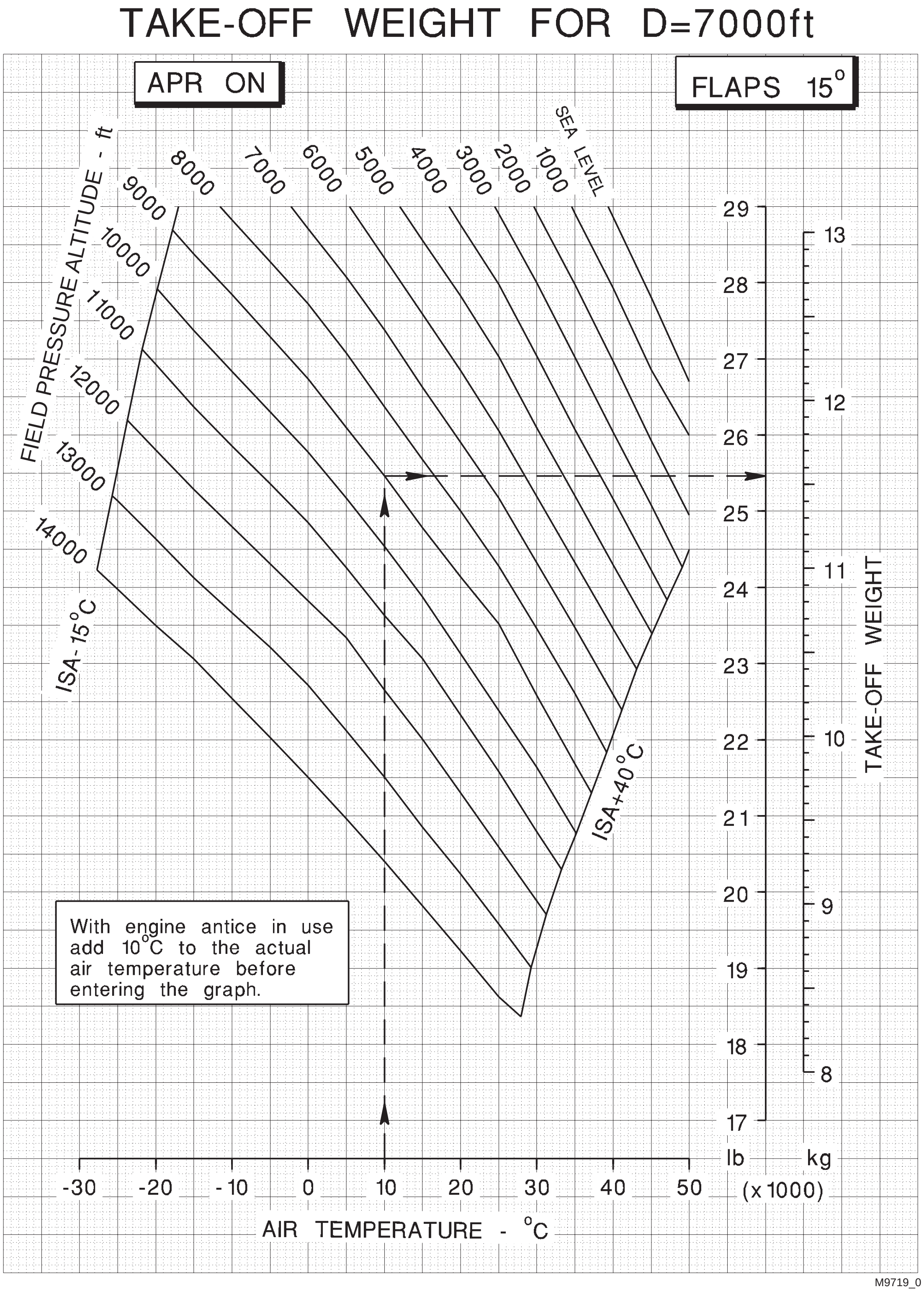
Take-off Weight for D = 5500 ft (Flaps 15°)
Figure 9f



Take-off Weight for D = 6000 ft (Flaps 15°)
Figure 9g

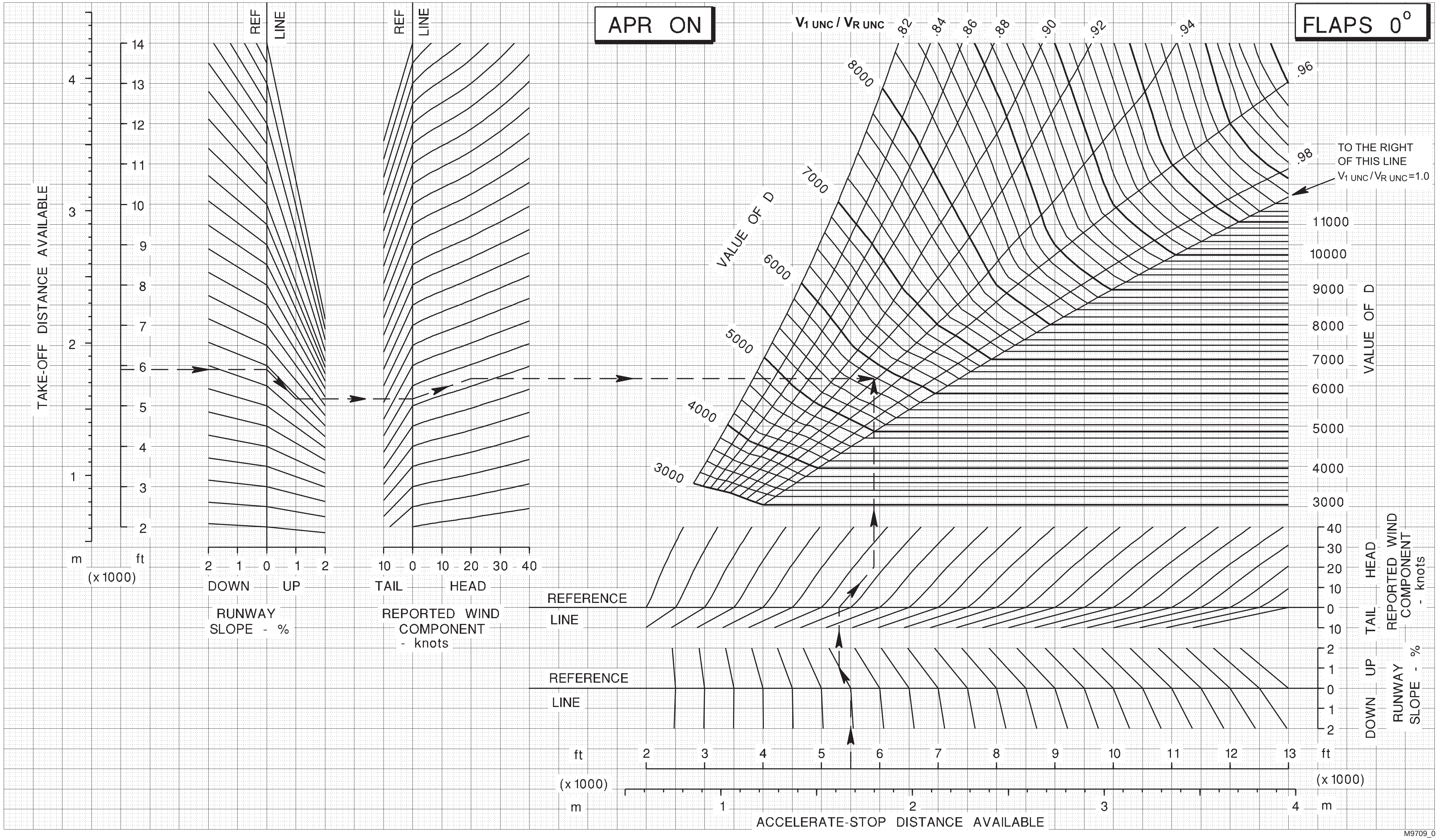


Take-off Weight for D = 6500 ft (Flaps 15°)
Figure 9h



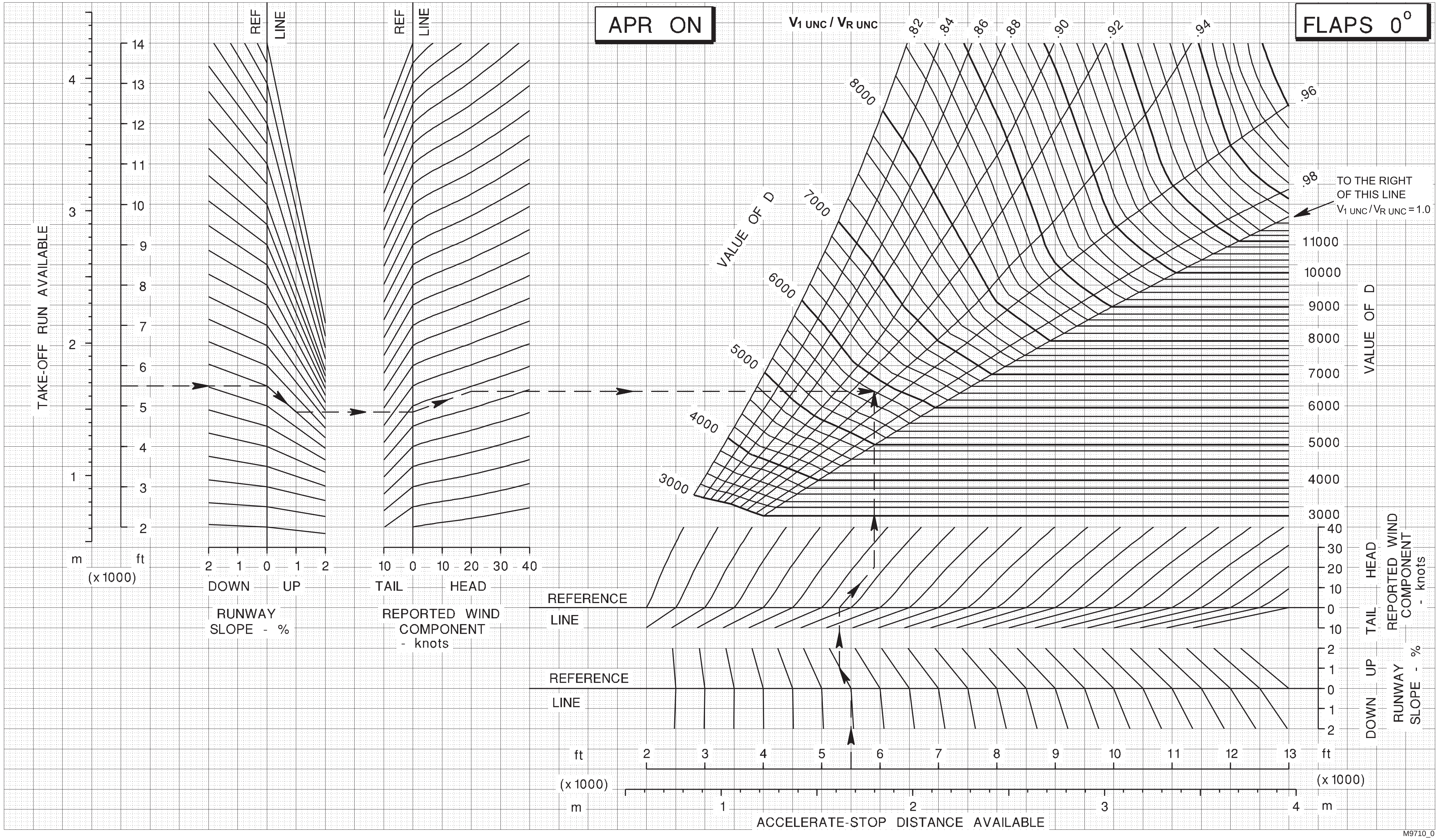
Take-off Weight for D = 7000 ft (Flaps 15°)
Figure 9k

VALUE OF 'D' AND $V_{1\ UNC}$ / $V_{R\ UNC}$ - TAKE-OFF DISTANCE AND ACCELERATE-STOP DISTANCE AVAILABLE

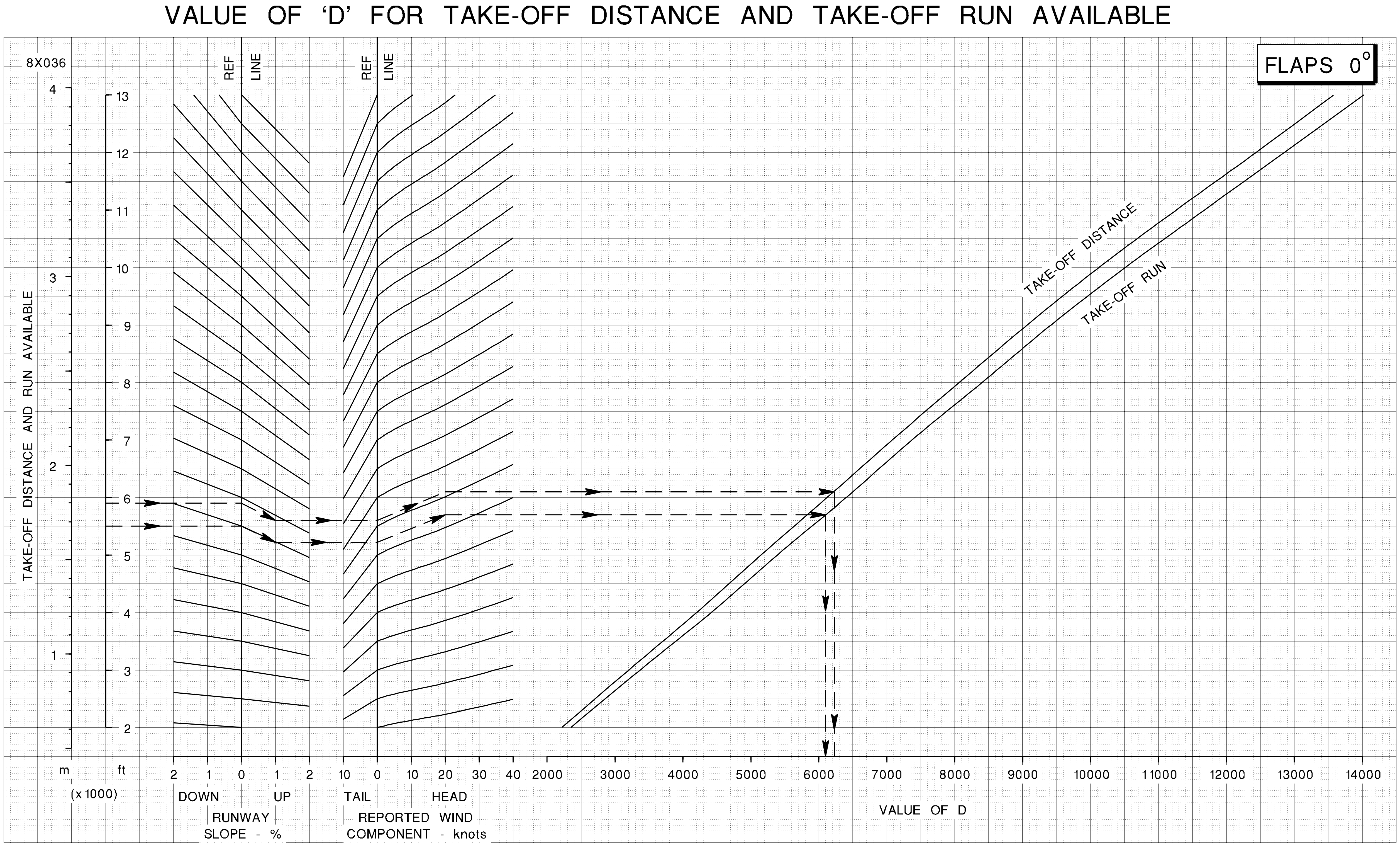


Value of D and $V_{1\ UNC}$/$V_{R\ UNC}$ - Take-off Distance and Accelerate-Stop Distance Available (Flaps 0°)
Figure 10

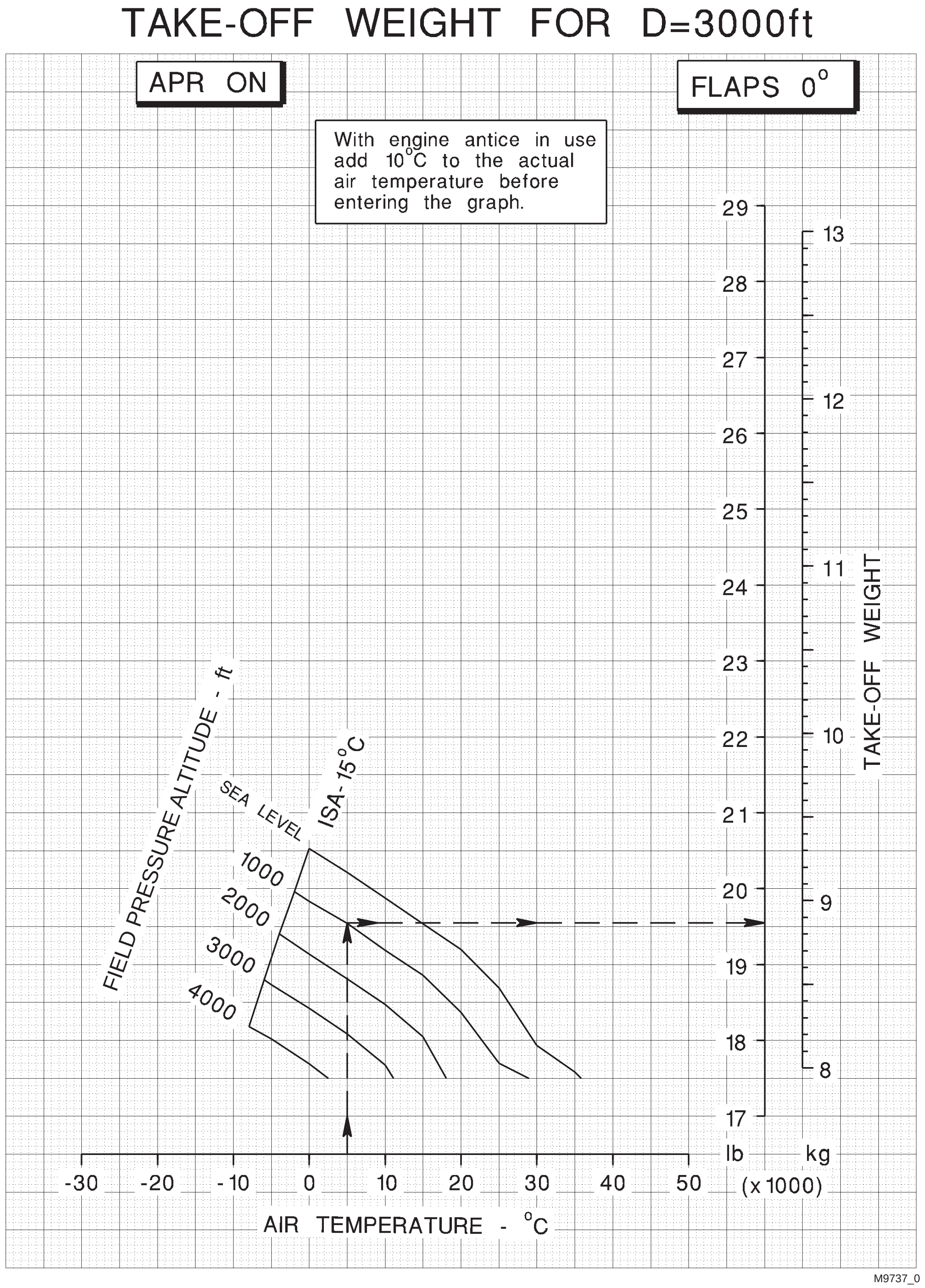
VALUE OF 'D' AND $V_{1\ UNC}$ / $V_{R\ UNC}$ - TAKE-OFF RUN AND ACCELERATE-STOP DISTANCE AVAILABLE



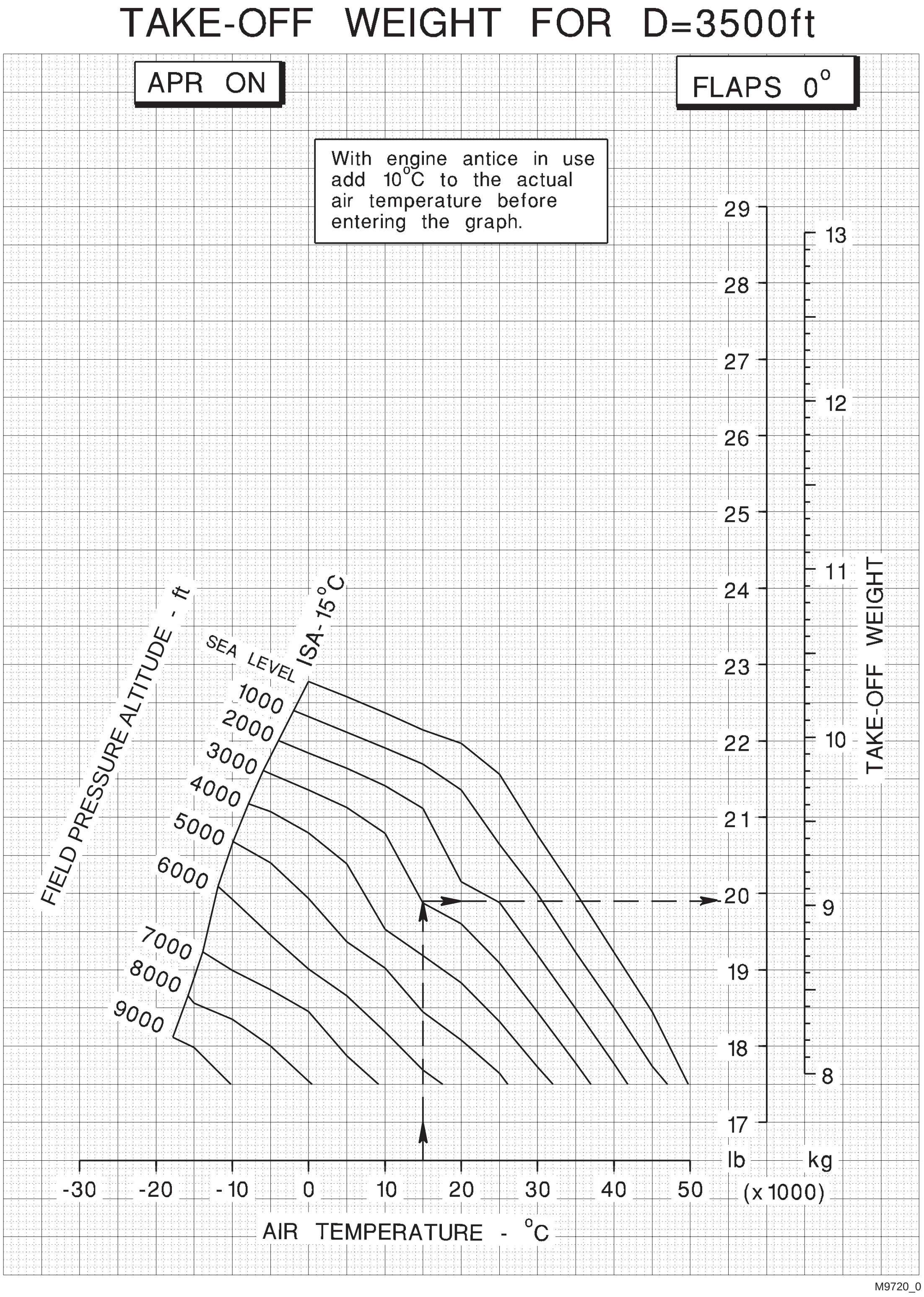
Value of D and V_1/V_R - Take-off Run and Accelerate-Stop Distance Available (Flaps 0°)
Figure 11



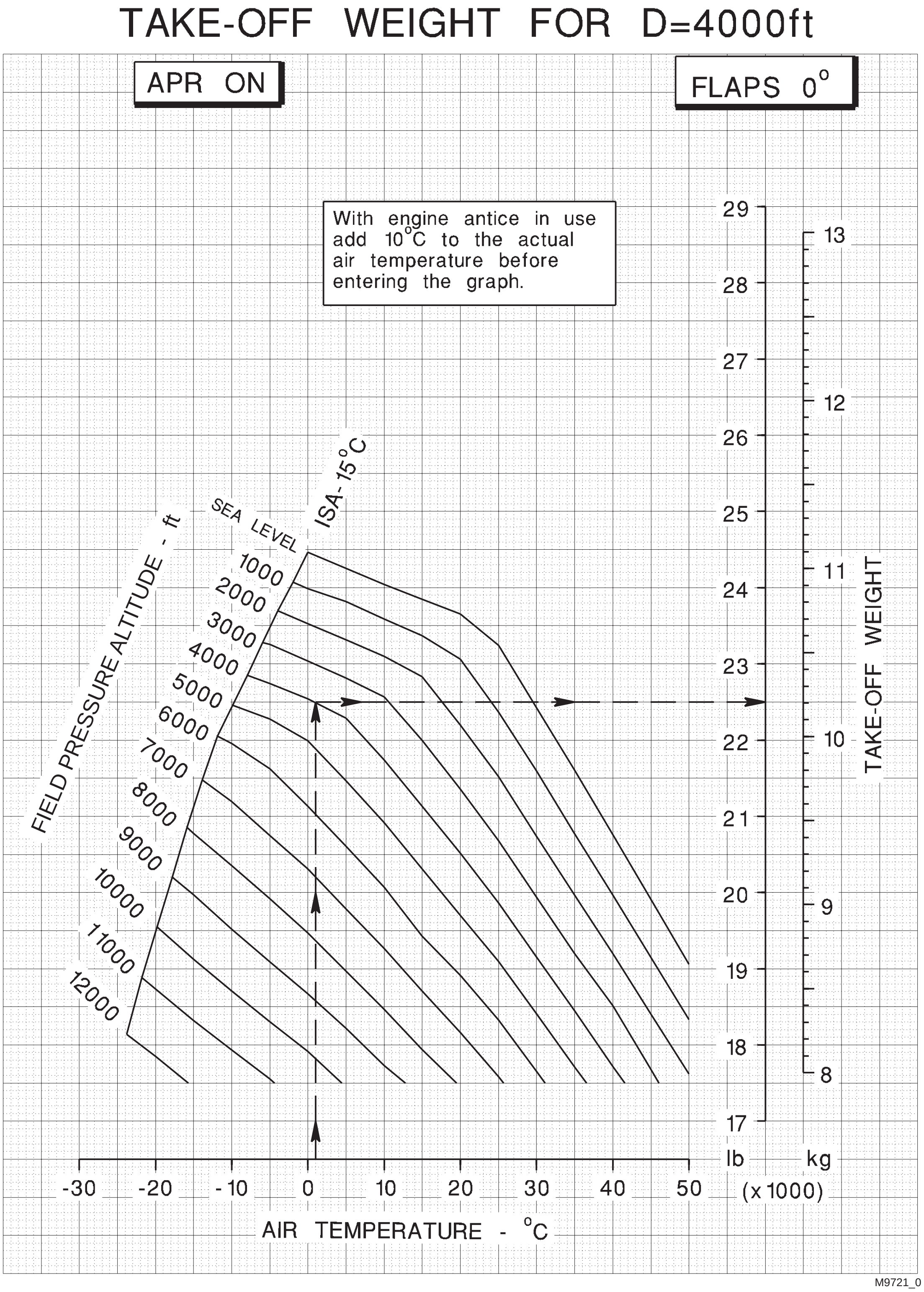
Value of D for Take-off Distance and Take-off Run Available (Flaps 0°)
Figure 12



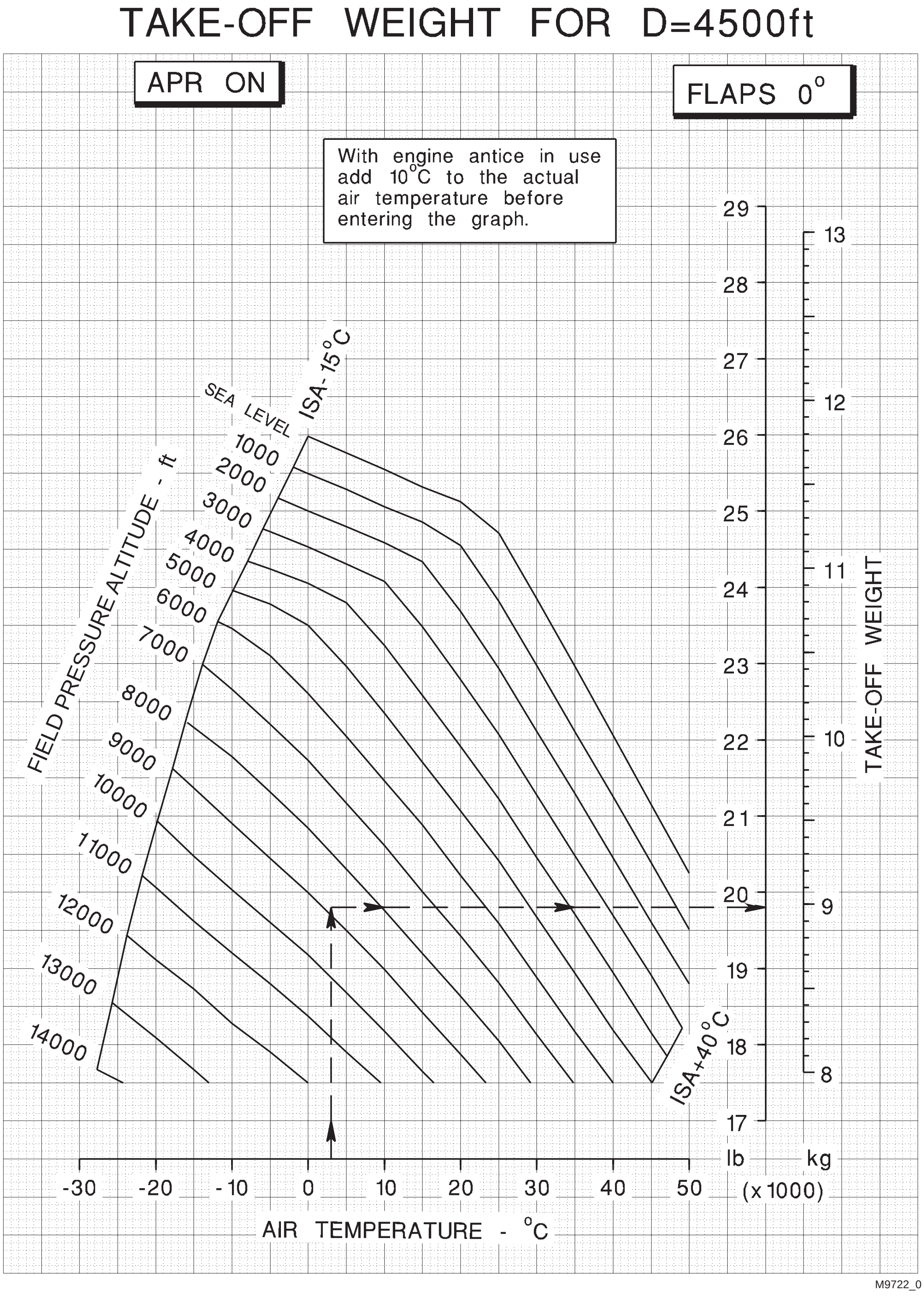
Take-off Weight for D = 3000 ft (Flaps 0°)
Figure 13a



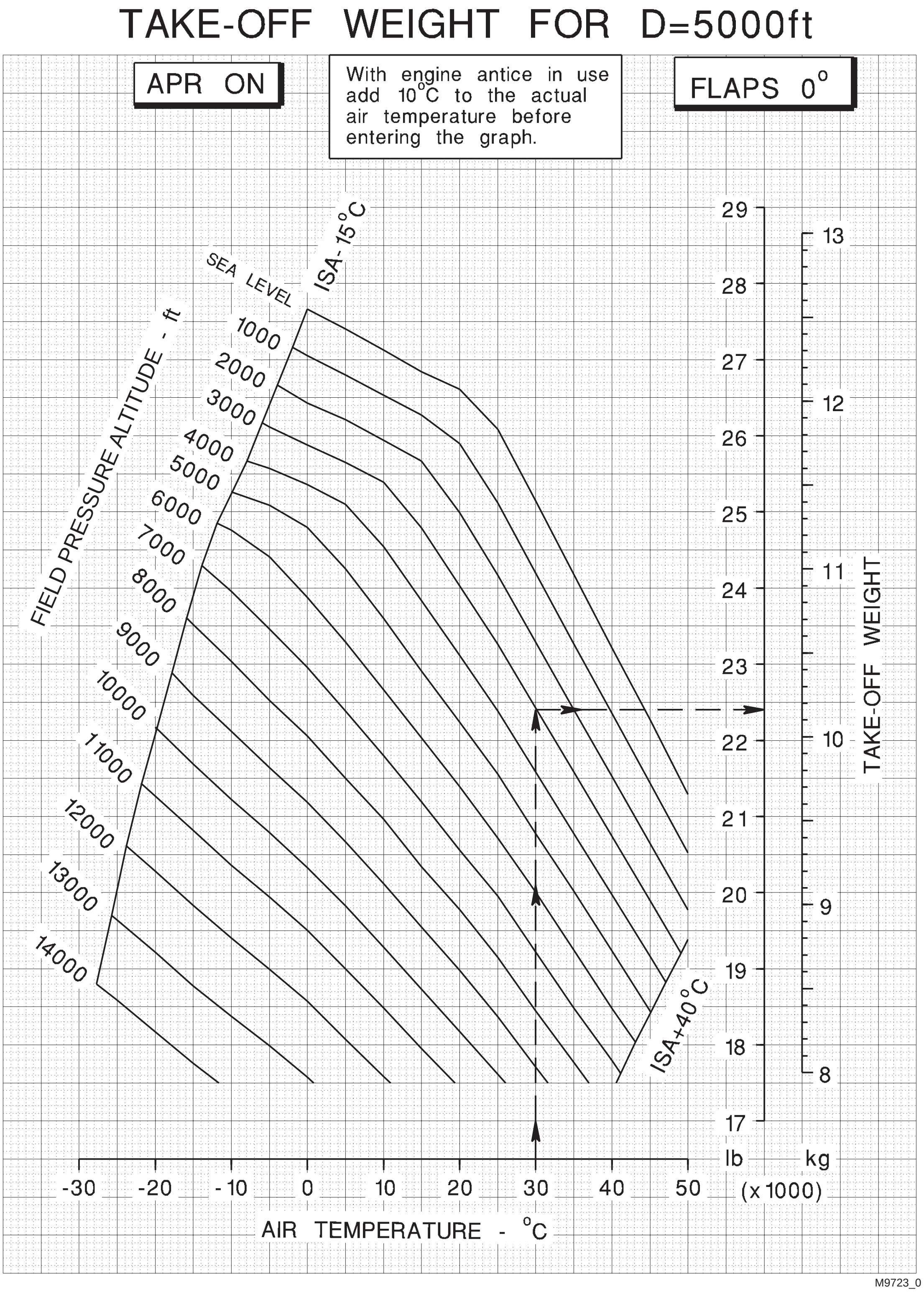
Take-off Weight for D = 3500 ft (Flaps 0°)
Figure 13b



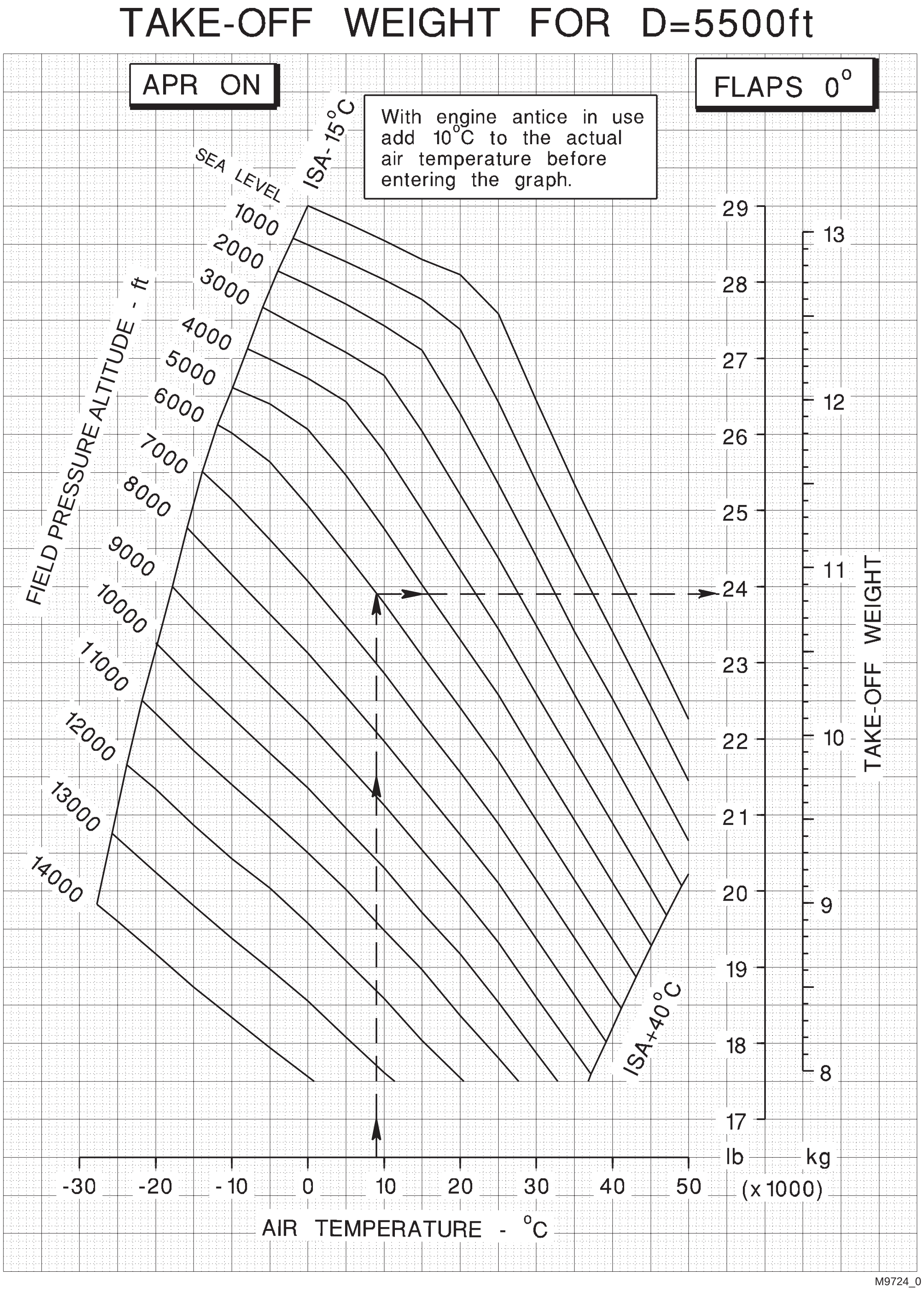
Take-off Weight for D = 4000 ft (Flaps 0°)
Figure 13c



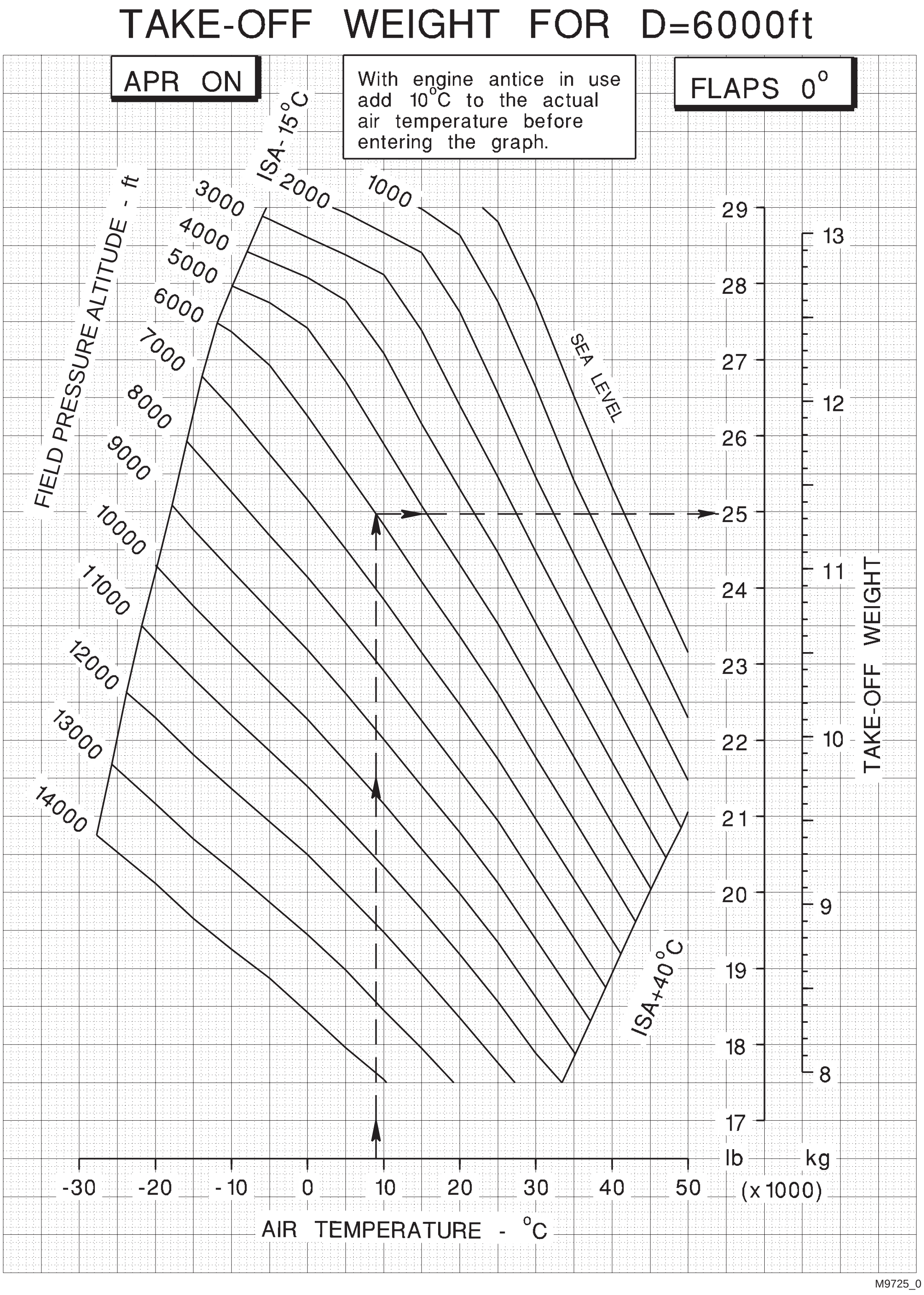
Take-off Weight for D = 4500 ft (Flaps 0°)
Figure 13d



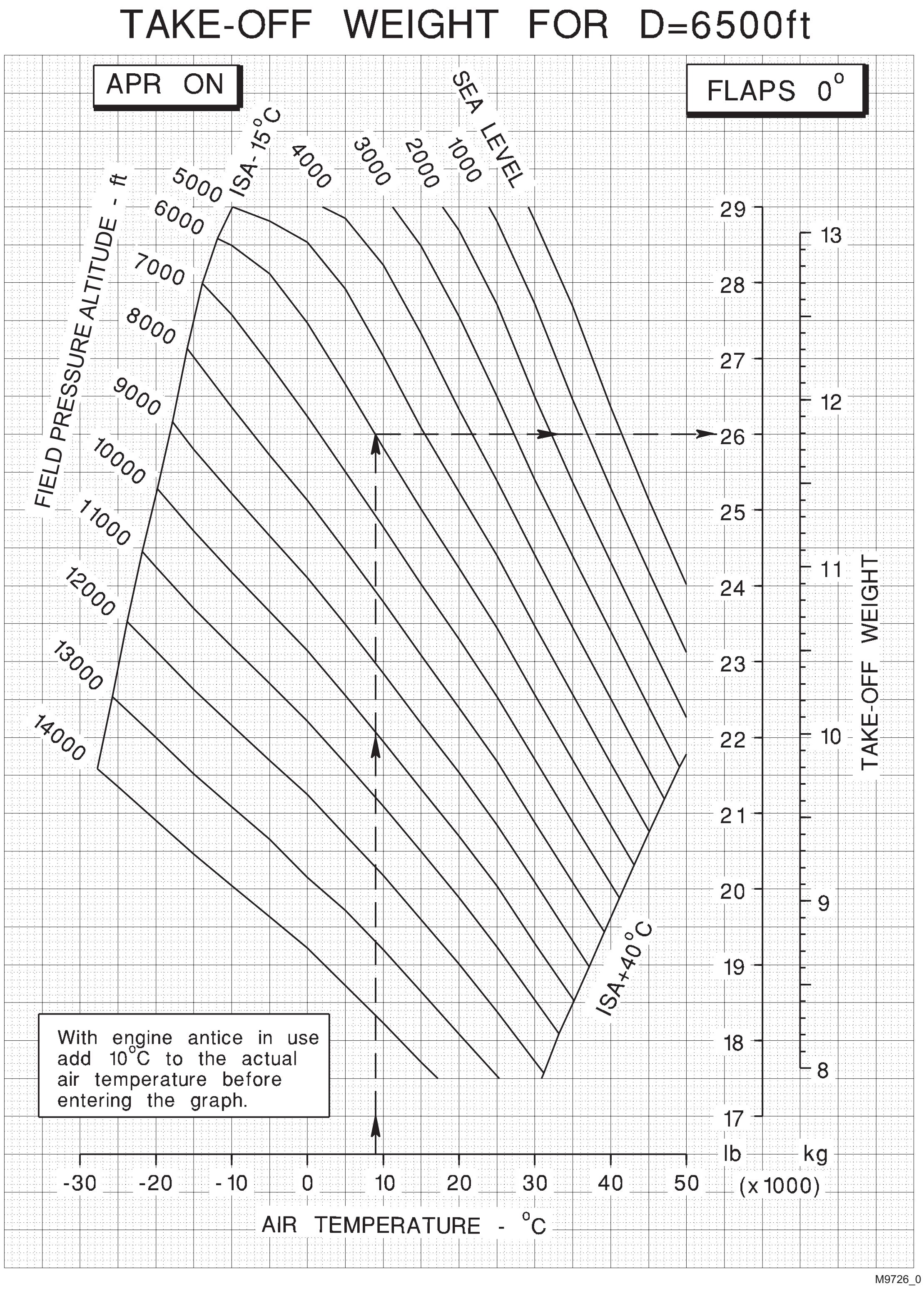
Take-off Weight for D = 5000 ft (Flaps 0°)
Figure 13e



Take-off Weight for D = 5500 ft (Flaps 0°)
Figure 13f

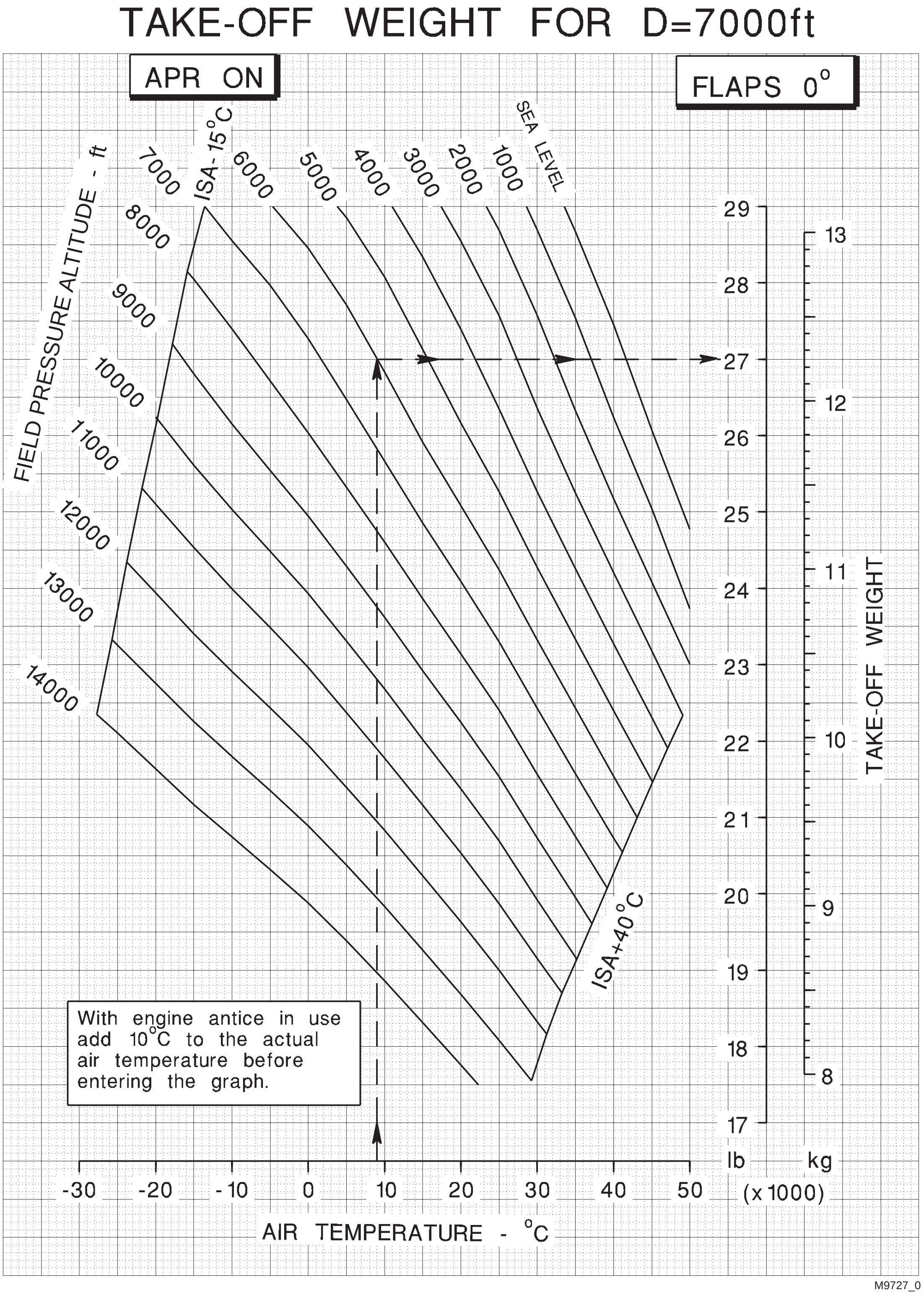


Take-off Weight for D = 6000 ft (Flaps 0°)
Figure 13g

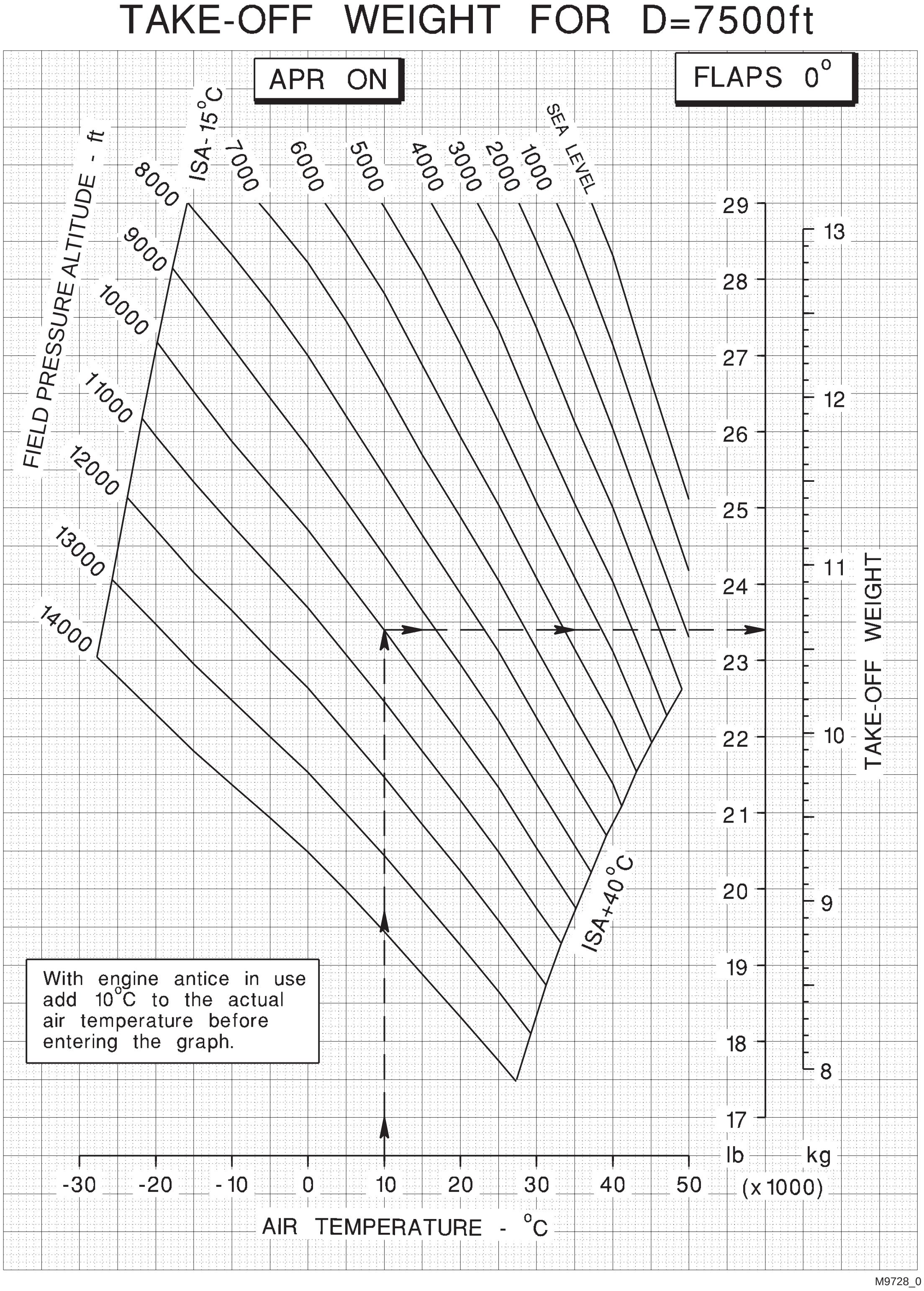


With engine antice in use add 10°C to the actual air temperature before entering the graph.

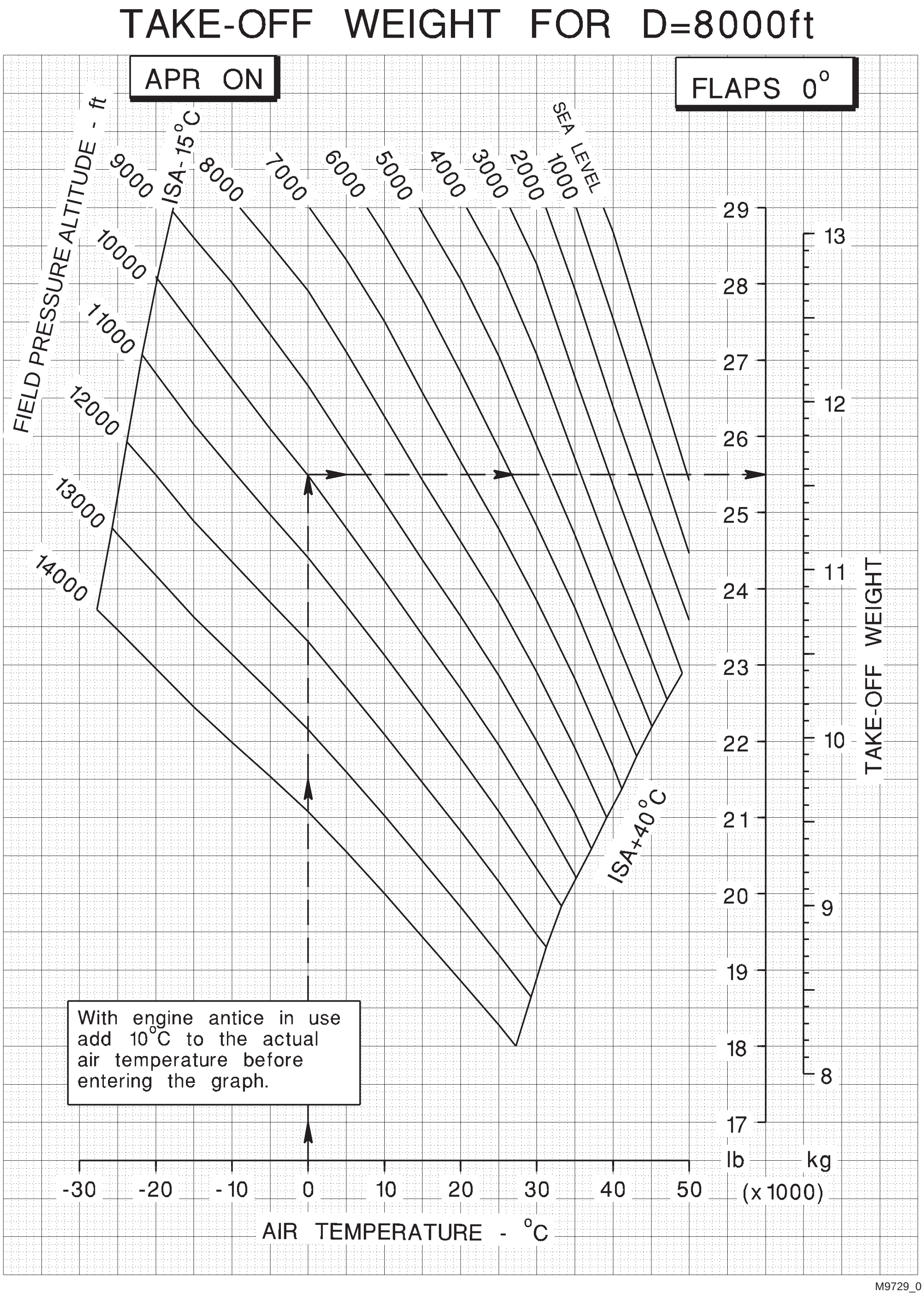
Take-off Weight for D = 6500 ft (Flaps 0°)
Figure 13h



Take-off Weight for D = 7000 ft (Flaps 0°)
Figure 13k

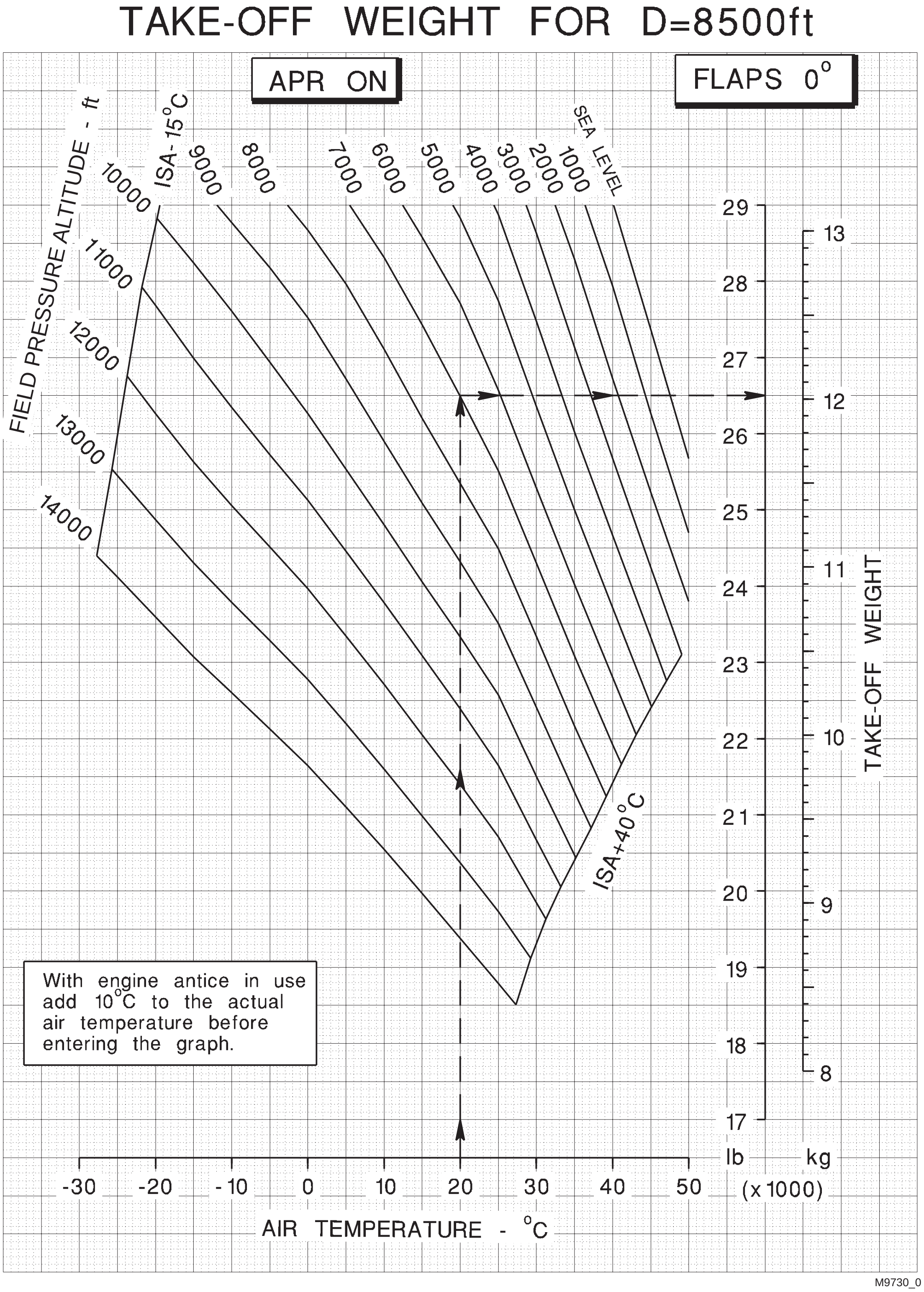


Take-off Weight for D = 7500 ft (Flaps 0°)
Figure 13m

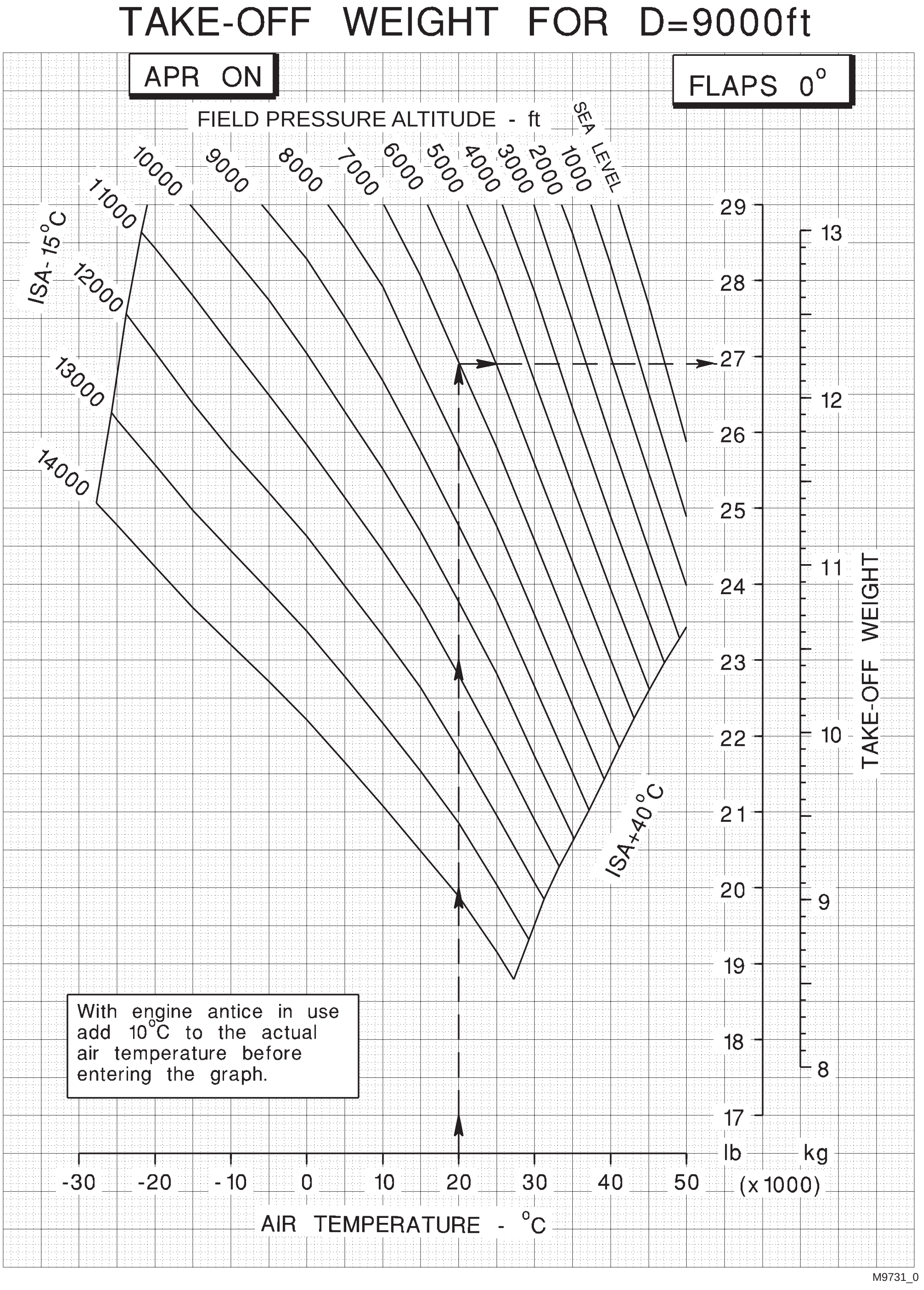


With engine antice in use add 10°C to the actual air temperature before entering the graph.

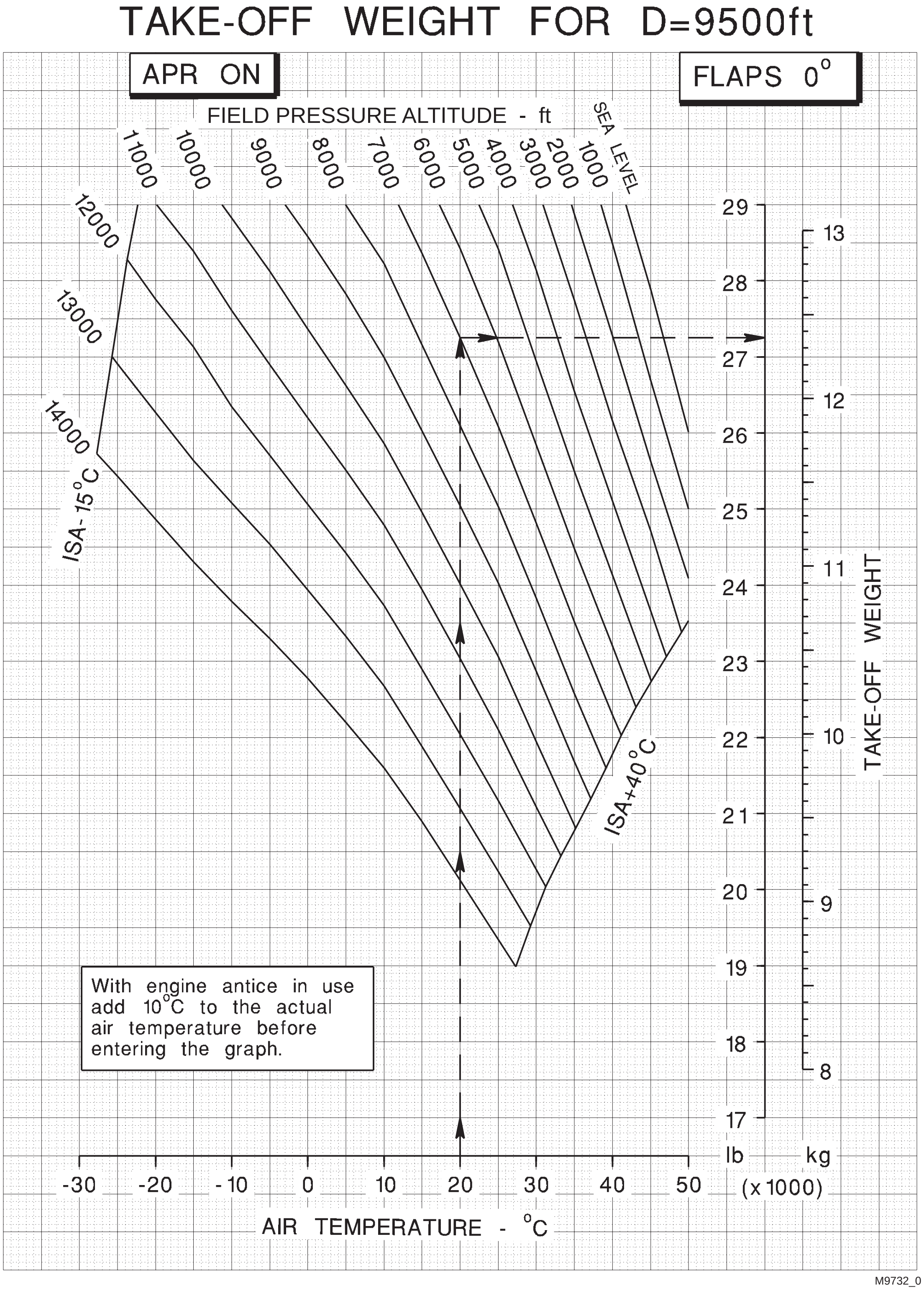
Take-off Weight for D = 8000 ft (Flaps 0°)
Figure 13n



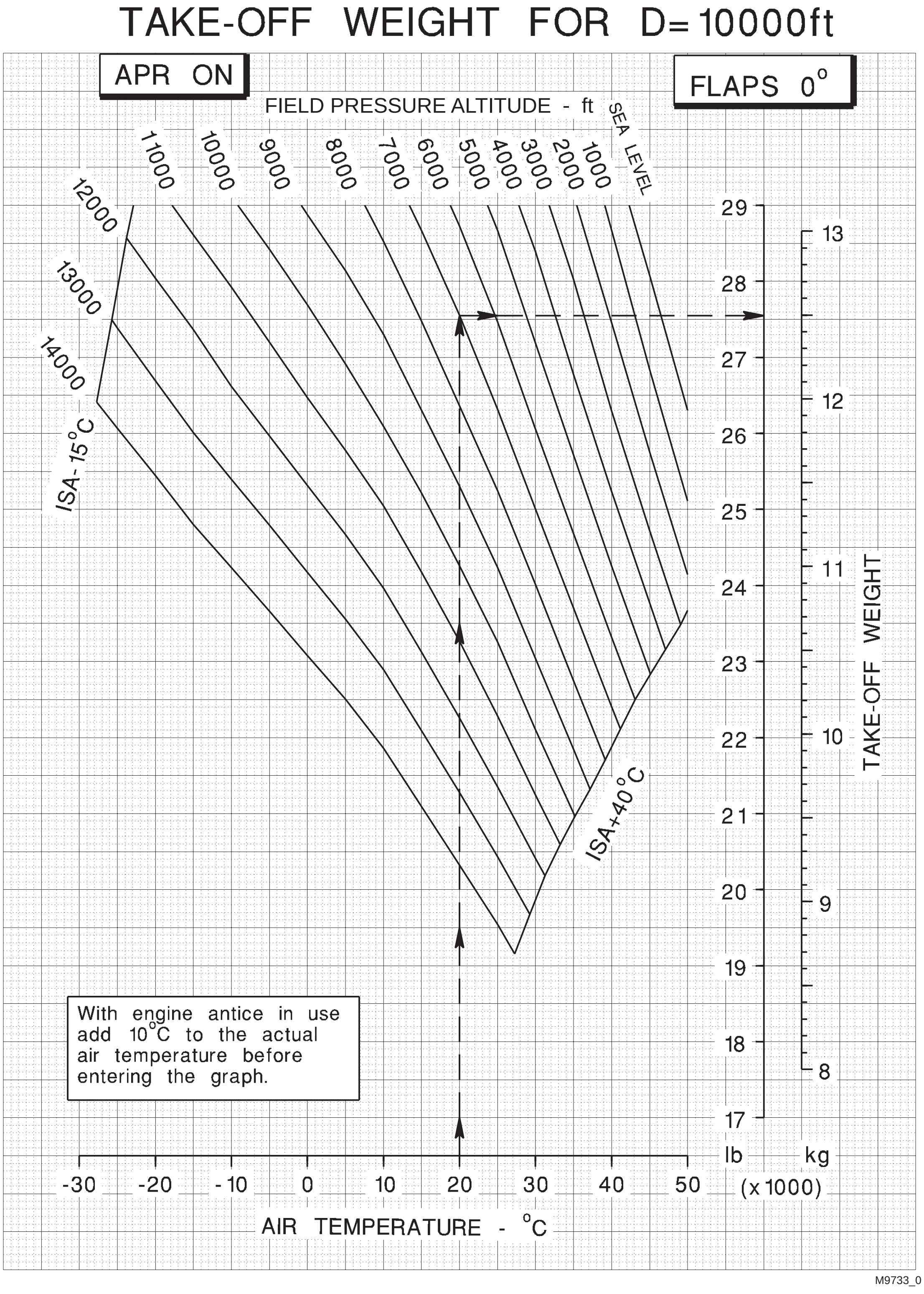
Take-off Weight for D = 8500 ft (Flaps 0°)
Figure 13p



Take-off Weight for D = 9000 ft (Flaps 0°)
Figure 13q

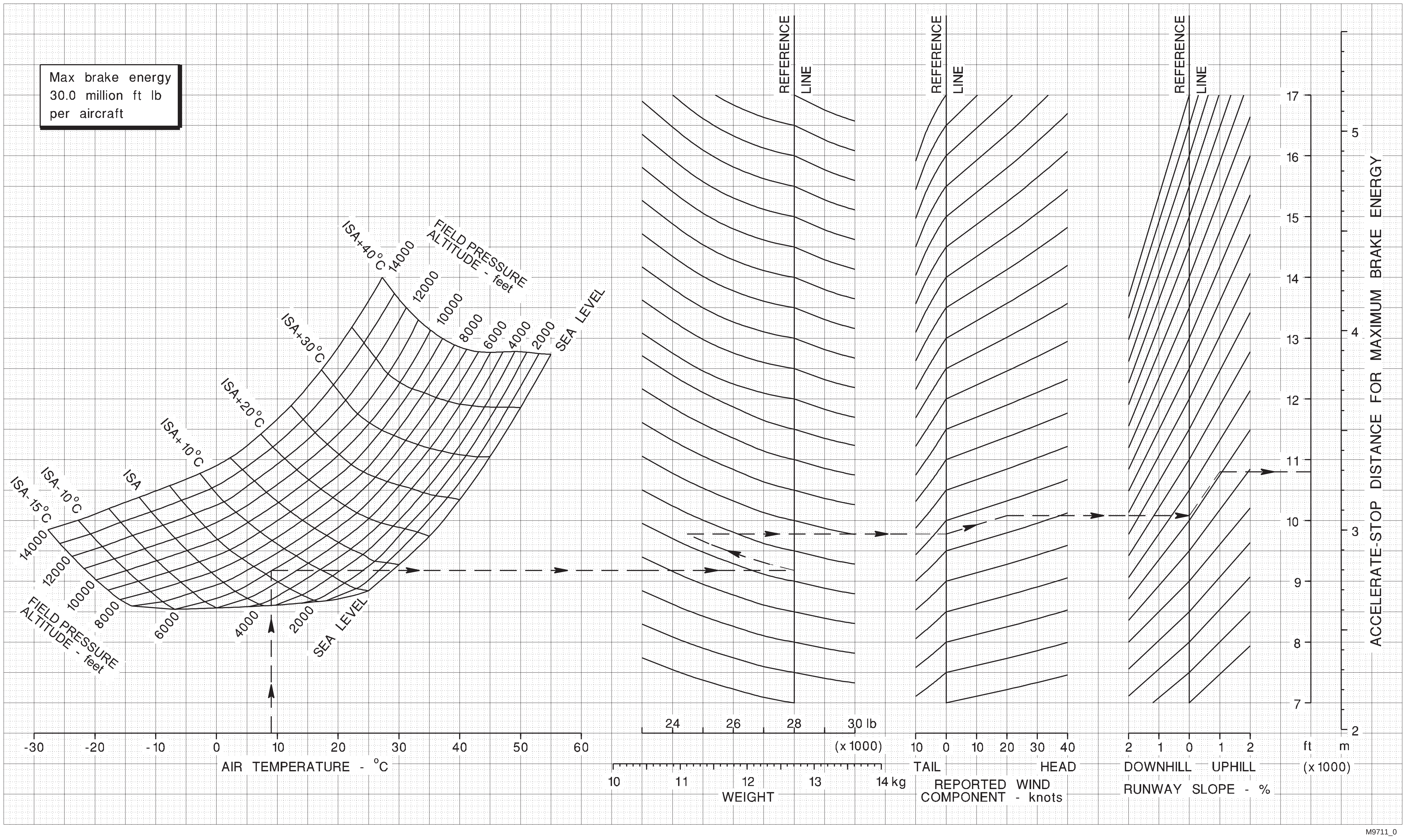


Take-off Weight for D = 9500 ft (Flaps 0°)
Figure 13r



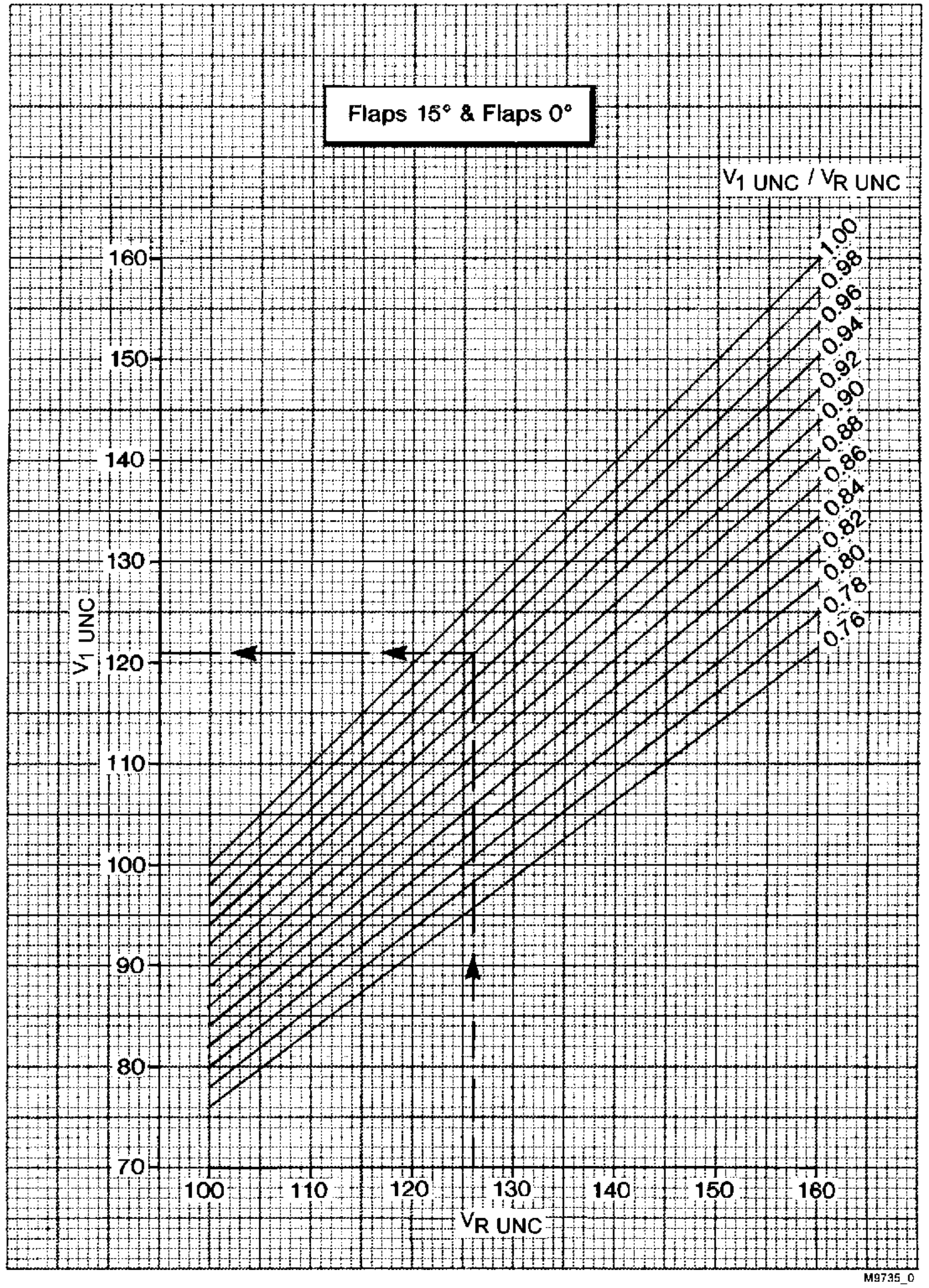
Take-off Weight for D = 10,000 ft (Flaps 0°)
Figure 13s

BRAKE ENERGY CAPACITY LIMITATION ON ACCELERATE-STOP DISTANCE

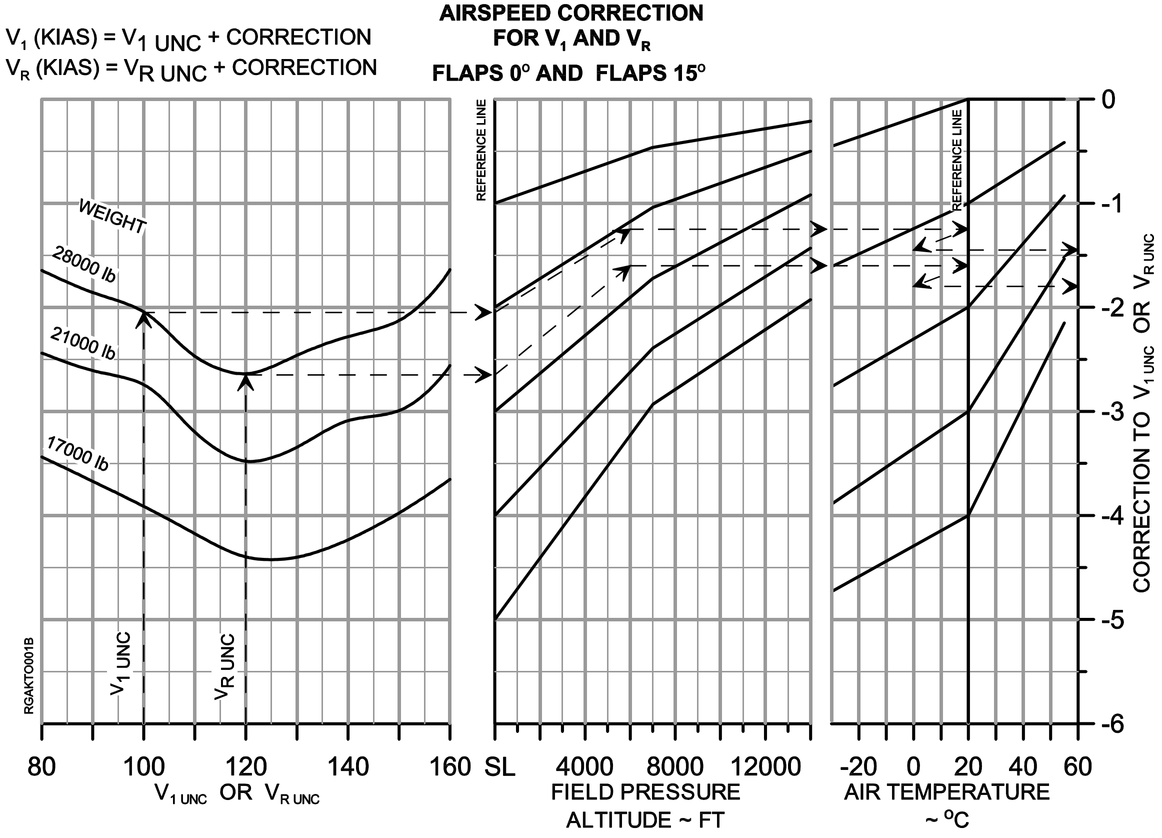


Brake Energy Capacity Limitation on Accelerate-Stop Distance
Figure 14

CONVERSION OF $V_{1\ UNC}$ / $V_{R\ UNC}$ INTO $V_{1\ UNC}$



Conversion of $V_{1\ UNC}$/$V_{R\ UNC}$ Into $V_{1\ UNC}$
Figure 15



Airspeed Correction for V_1 and V_R
(Flaps 0° and 15°)
Figure 16

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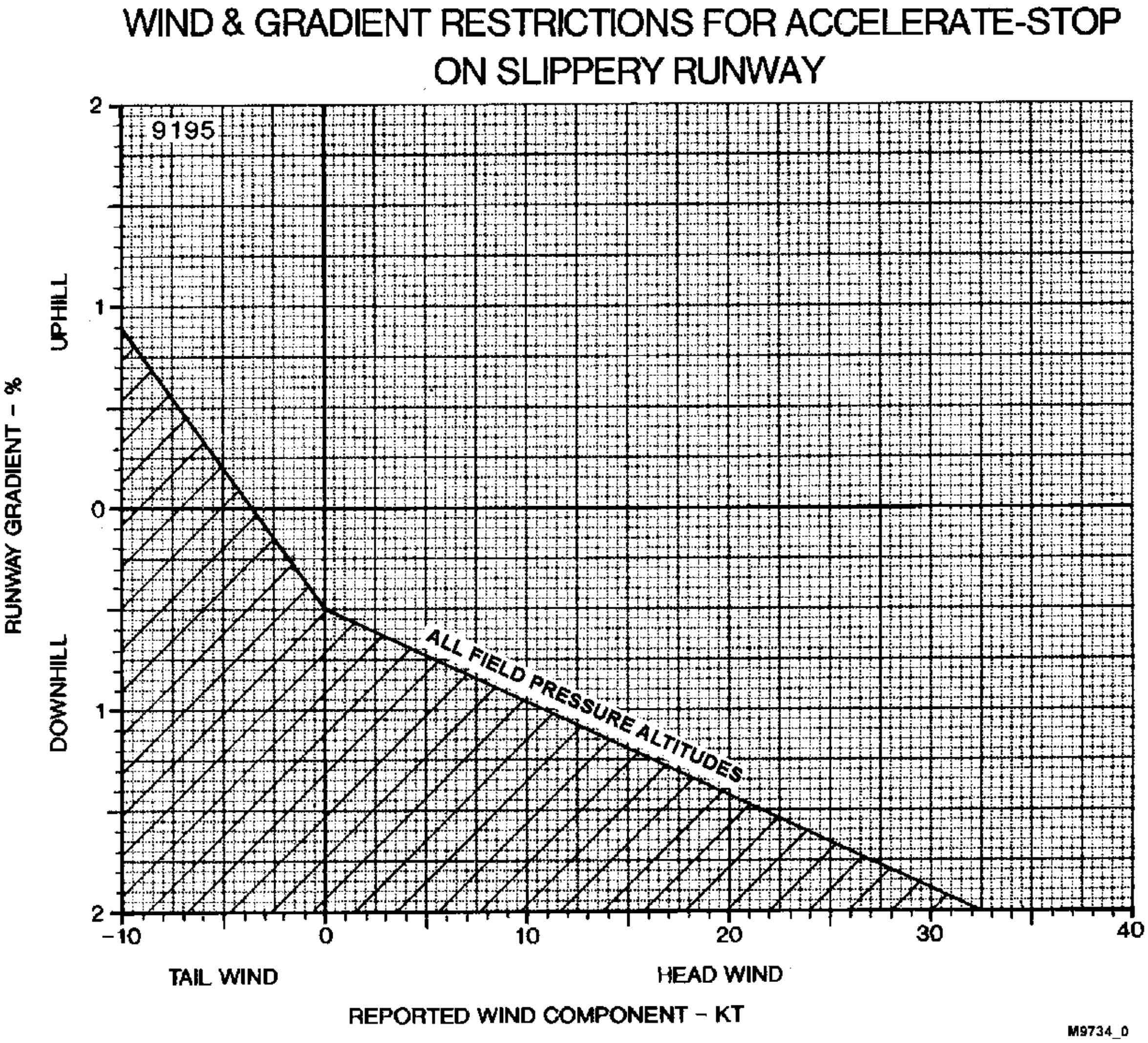

Wind & Gradient Restrictions for
Accelerate-Stop on Slippery Runway
Figure 17

SECTION 6 - WEIGHT & BALANCE

No Change.

Hawker Beechcraft

Hawker 800XP

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0069
Revision 2
for
AIRPLANES EQUIPPED WITH HAWKER BEECHCRAFT CORPORATION WINGLETS

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL

P/N 140-590032-0005

Applicable only to airplanes
with HBC Winglet Kit Nos.
140-1701, 140-1703 or 140-1704

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: M M Baker
for
Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date 5/24/07

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0069
for
AIRPLANES EQUIPPED WITH HAWKER BEECHCRAFT CORPORTATION WINGLETS

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Use the List Of Effective Pages to determine the current status of this supplement.

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0069
for
AIRPLANES EQUIPPED WITH
HAWKER BEECHCRAFT CORPORATION
WINGLETS

LOG of REVISIONS

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0	1 of 18 thru 18 of 18	Original Issue	4/10/06	wc Schurstach
1	1 of 18 thru 18 of 18	Revised page headers to reflect the Hawker Beechcraft Corporation name change. Revised page footers.	5/24/07	DM Baker
	1 of 18	Revised Title page to change title to "Airplanes Equipped with Hawker Beechcraft Corporation Winglets." Added Winglet Kit applicability to Title page.		
	2 of 18	Revised LOEP for Revision 1.		
	3 of 18	Revised Log of Revisions with Revision 1 information.		
	6 of 18	Added Kit 140-1704 to Introduction.		
	7 of 18	Added spaces to airplane dimension callouts in Figure 1.		
2	1 of 18 thru 18 of 18	Revised page footers for Revision 2.	12/23/10	DM Baker
	1 of 18 and 2 of 18	Revised Title page and LOEP for Revision 2.		
	3 of 18 and 4 of 18	Revised Log of Revisions with Revision 2 information.		
	5 of 18	Changed SECTION 1 - GENERAL sub headers for conformity.		

LOG of REVISIONS (continued)

Rev No.	*Page No(s)*	*Description*	*Date of Revision*	*FAA Approved*
2	6 of 18	Changed TOC sub headers for conformity. Changed SECTION 1 - GENERAL sub headers for conformity.		
	7 of 18	Deleted header for conformity. Deleted extra parentheses.		
	8 of 18	Changed reference text for conformity.		
	9 of 18 and 10 of 18	Deleted header for conformity.		
	11 of 18	Revised text with additional information and procedures for ICE PROTECTION - AIRFRAME ICE PROTECTION SYSTEM MALFUNCTIONS.		
	13 of 18	Changed "anticing" to read "anti-icing". Re-formatted SECTION 6 text for conformity.		
	14 of 18 and 15 of 18	Deleted header for conformity.		
	16 of 18	Changed header "FUSELAGE STATION LOCATING DIAGRAM" to read "FUSELAGE STATION LOCATIONS" for conformity.		

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INTRODUCTION

This supplement applies only to airplanes equipped with Hawker Beechcraft Corporation Kit Nos. 140-1701, 140-1703 or 140-1704 which provide for the installation of winglets.

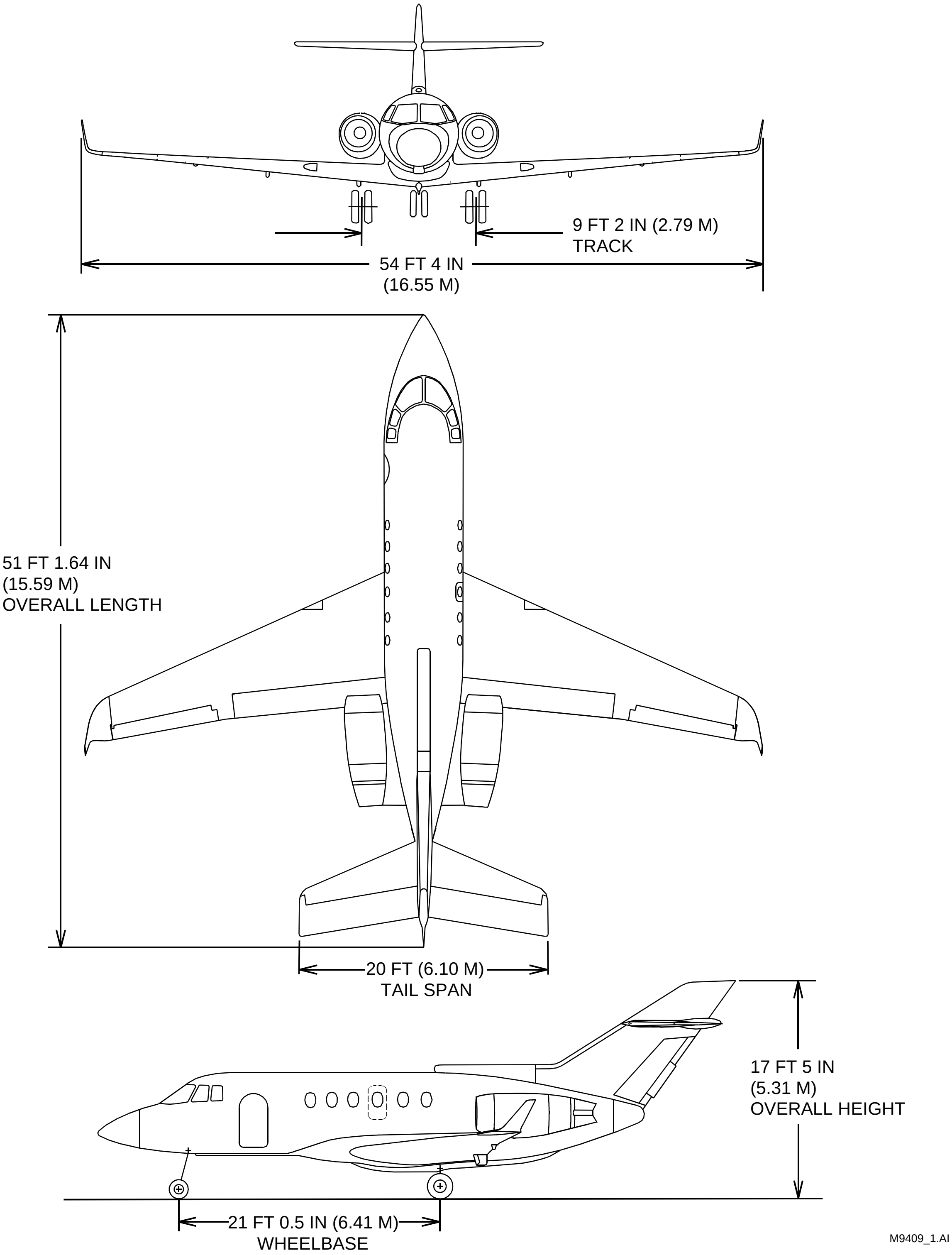
The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable except where superseded by the information given in this supplement.

SECTION 1 - GENERAL

LEADING PARTICULARS

Dimensions

See Figure 1 for General Dimensions.



General Dimensions
Figure 1

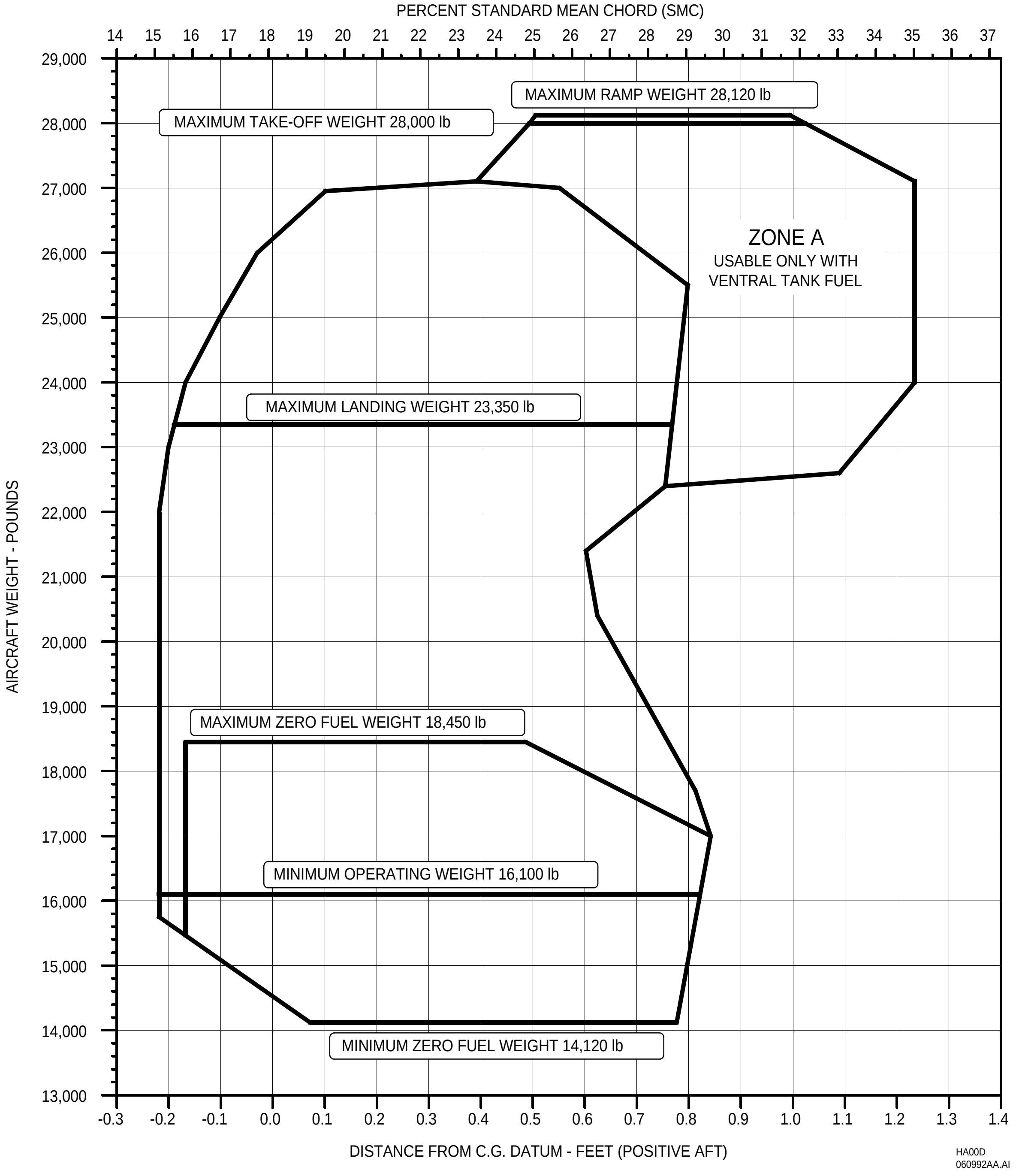
SECTION 2 - LIMITATIONS

WEIGHT LIMITATIONS

Minimum Operating Weight.................................16,100 lb (7303 kg)

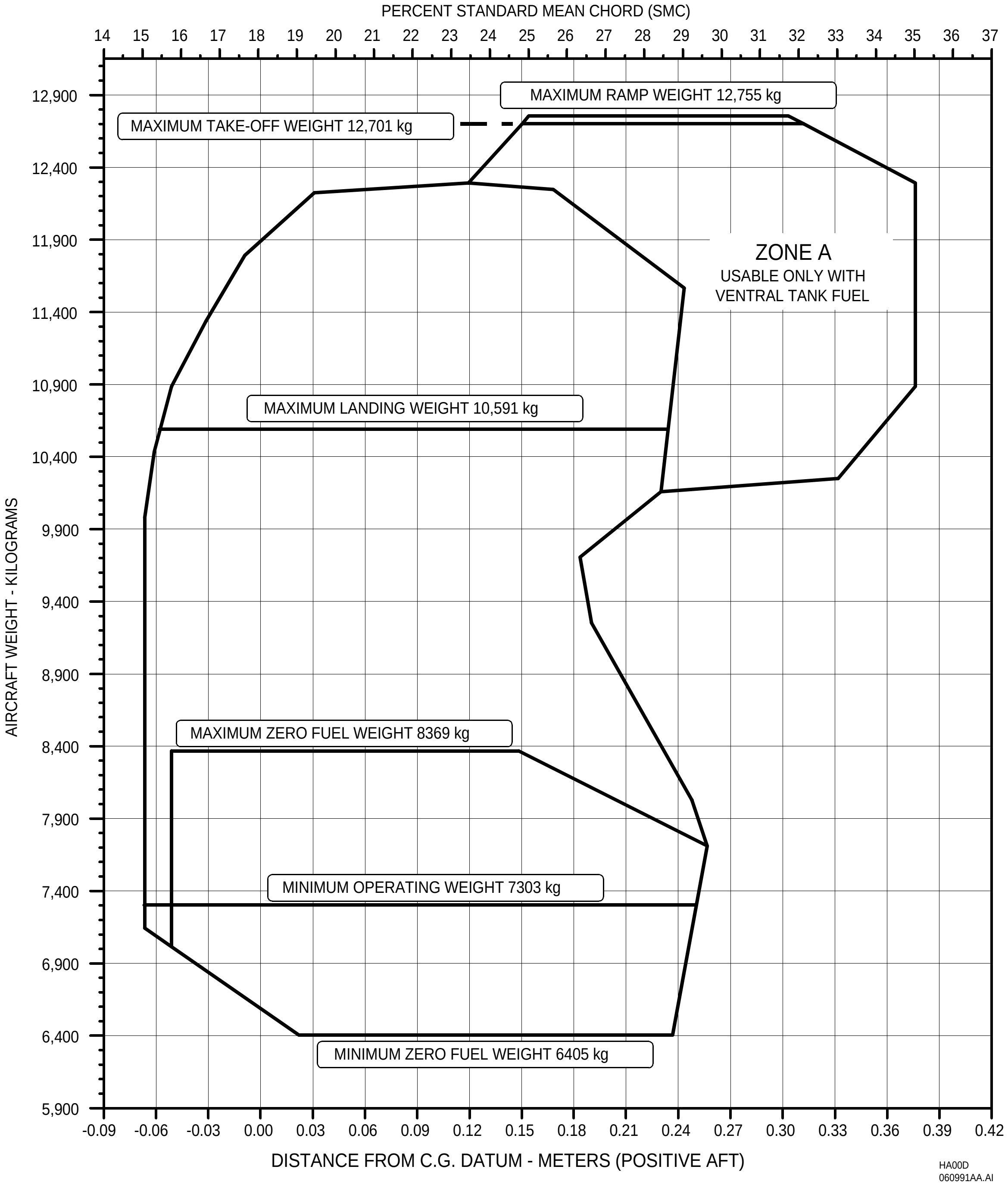
LOAD LIMITATIONS

See Figure 2 (pounds/feet) or Figure 3 (kilograms/meters) for a Loading and Flight Envelope.



(Landing Gear Retraction Moment Change is Negligible)

Loading and Flight Envelope - Pounds/Feet
Figure 2



(Landing Gear Retraction Moment Change is Negligible)

Loading and Flight Envelope - Kilograms/Meters
Figure 3

SECTION 3 - EMERGENCY PROCEDURES

No Change

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

ICE PROTECTION

AIRFRAME ICE PROTECTION SYSTEM MALFUNCTIONS

The following information is directed toward TKS protected surfaces

Indications of malfunction may include:

- No pump running noise
- No fluid remaining
- Ice evident on wing TKS panel

If a malfunction is apparent or suspected during flight, proceed as follows:

- Leave icing conditions as soon as possible. Remain clear of actual or forecast icing.
- Before starting the landing approach, observe the wing leading edge to determine if ice is present on the TKS panels or the wing surface directly behind the panels (protected surfaces).

(a) If ice is present on the protected surfaces, do not select flap.

  i. If atmospheric conditions permit, attempt to shed residual ice accumulation prior to landing.

  ii. If ice cannot be shed from the protected surfaces, use flaps 0° for landing.

  Refer to the Airplane Flight Manual, Section 4, Sub-section 4.05 ABNORMAL PROCEDURES - OPERATIONS **FLAPS UP or 15° APPROACH and LANDING** procedure.

(b) If ice is not present, make a normal landing.

The following information is directed toward unprotected surfaces

During flight in icing conditions, ice accumulation may be expected on wing landing light covers, vortilons and winglet leading edges (unprotected surfaces).

NOTE: If icing conditions exist, or if ice has formed on the unprotected parts of the airframe prior to approach, add 10 KIAS to the normal approach and landing speeds. Landing distance is increased by 15%.

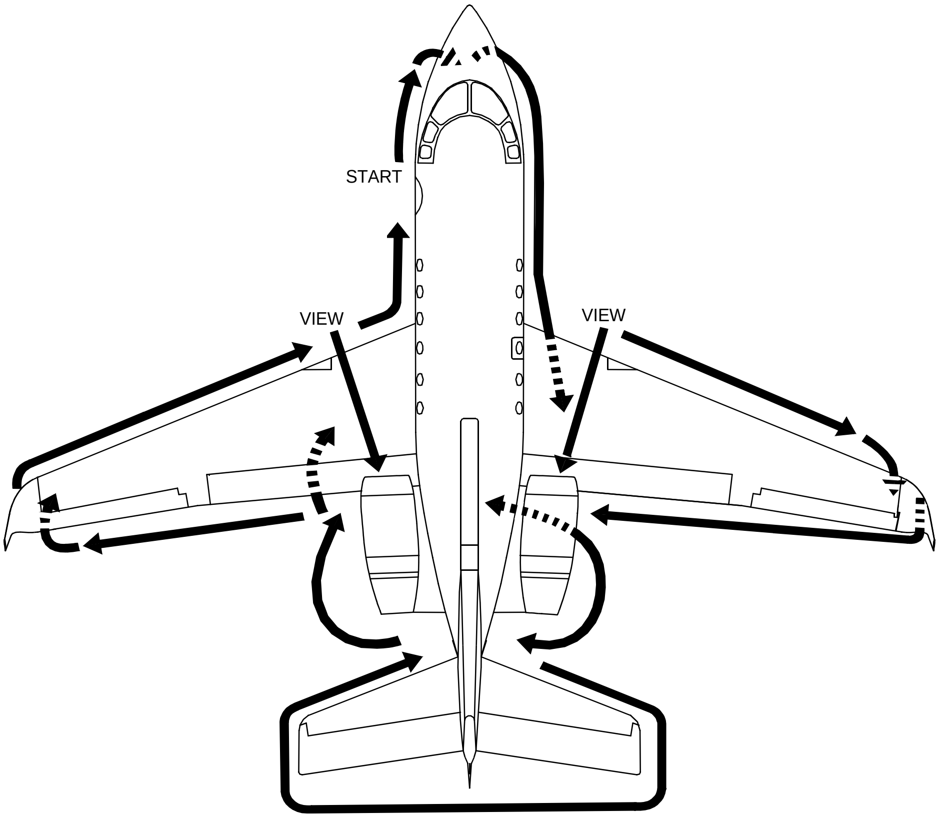
SECTION 4 - ABNORMAL/NORMAL PROCEDURES (continued)

Sub-section 4.10 - NORMAL PROCEDURES

EXTERNAL CHECKS

NOTE: For flight without certain secondary airframe parts, refer to AFM Section 7 - SUPPLEMENTS, Supplement P/N 140-590032-0071 Configuration Deviation List (CDL).

Winglets ....Check undamaged and secure



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NOTE: Dashed lines indicate check areas underneath the airplane.

Recommended Walk-Around Pattern
Figure 4

SECTION 5 - PERFORMANCE

Sub-section 5.05 - GENERAL

INTRODUCTION

Standard Condition of Airplane

The surface finish should be average gloss with condition and fit of joints, panels, anti-icing equipment, doors, winglets and other externally mounted items being generally good.

Performance

The performance applies to an airplane equipped with two Allied-Signal Engines TFE731-5BR-1H and equipped with an Automatic Power Reserve system (APR), winglets and in the configurations which are stated in the following information.

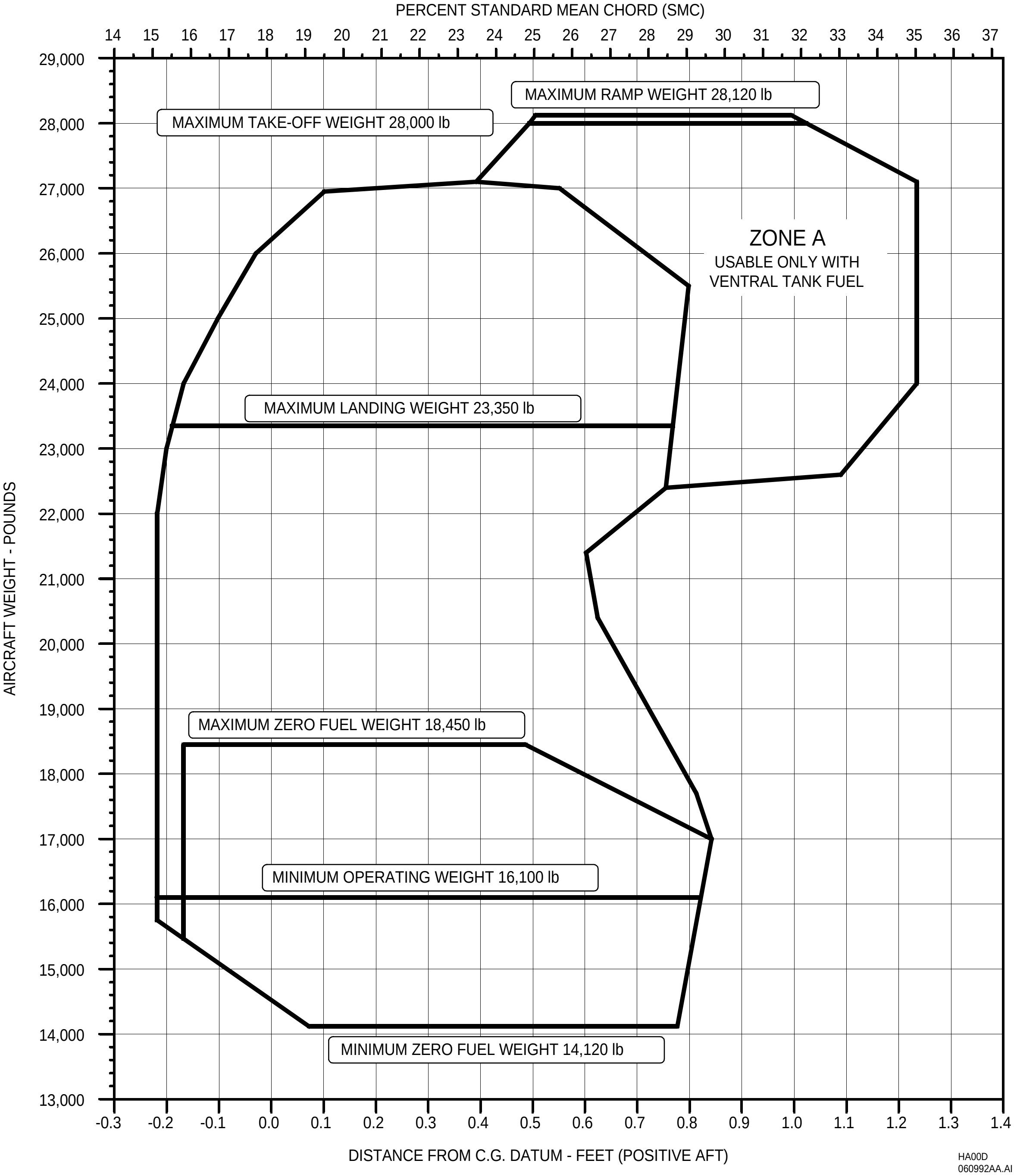
The basic configuration is shown in this supplement SECTION 1 - GENERAL Figure 1.

SECTION 6 - WEIGHT & BALANCE

WEIGHT and CENTER of GRAVITY (CG) LIMITATIONS/DATA

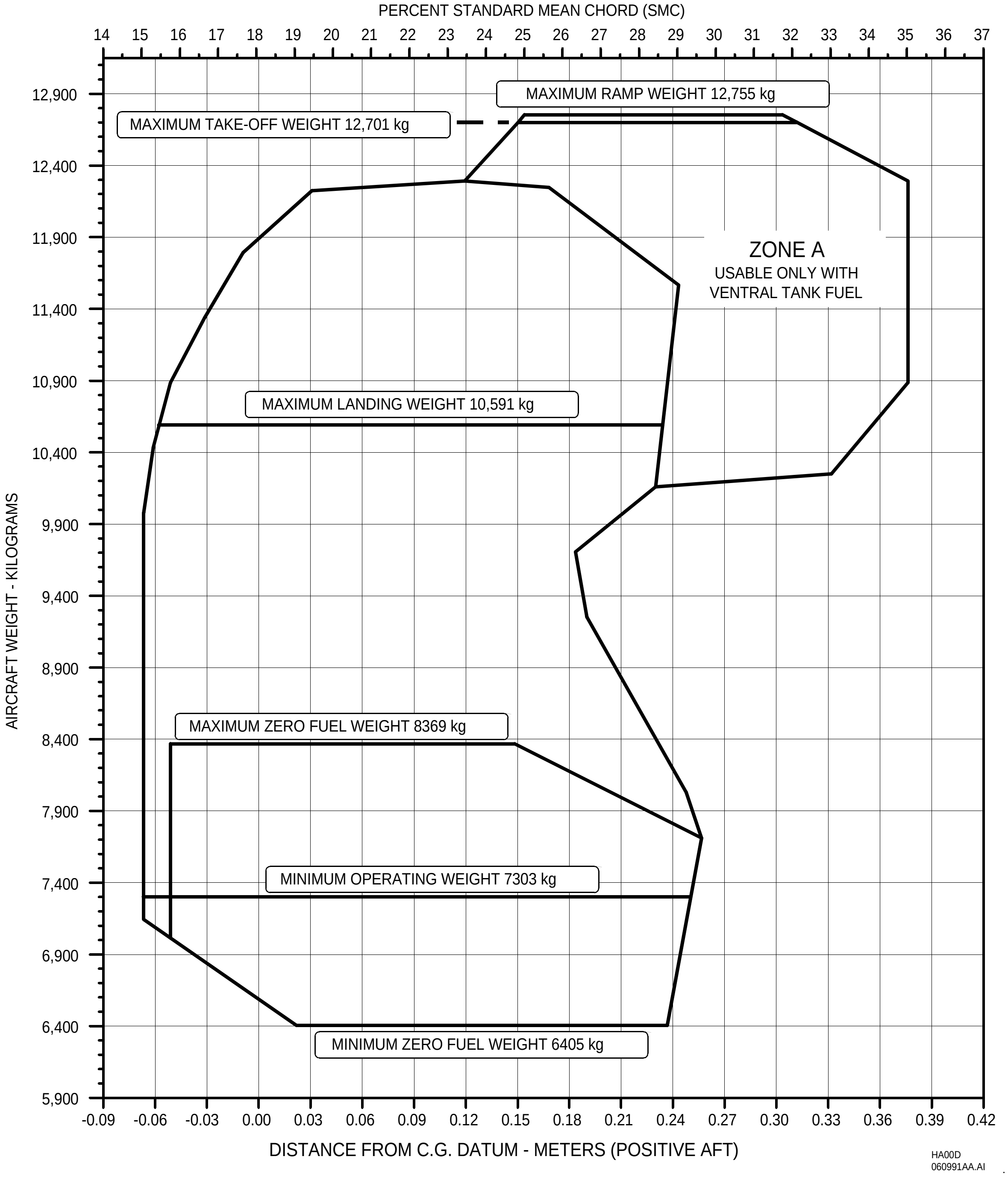
See Figure 5 (pounds/feet) or Figure 6 (kilograms/meters) for a Loading and Flight Envelope.

Weight Limitations	**lb (kg) Unless otherwise noted**
Minimum Operating Weight	16,100 lb (7303)



(Landing Gear Retraction Moment Change is Negligible)

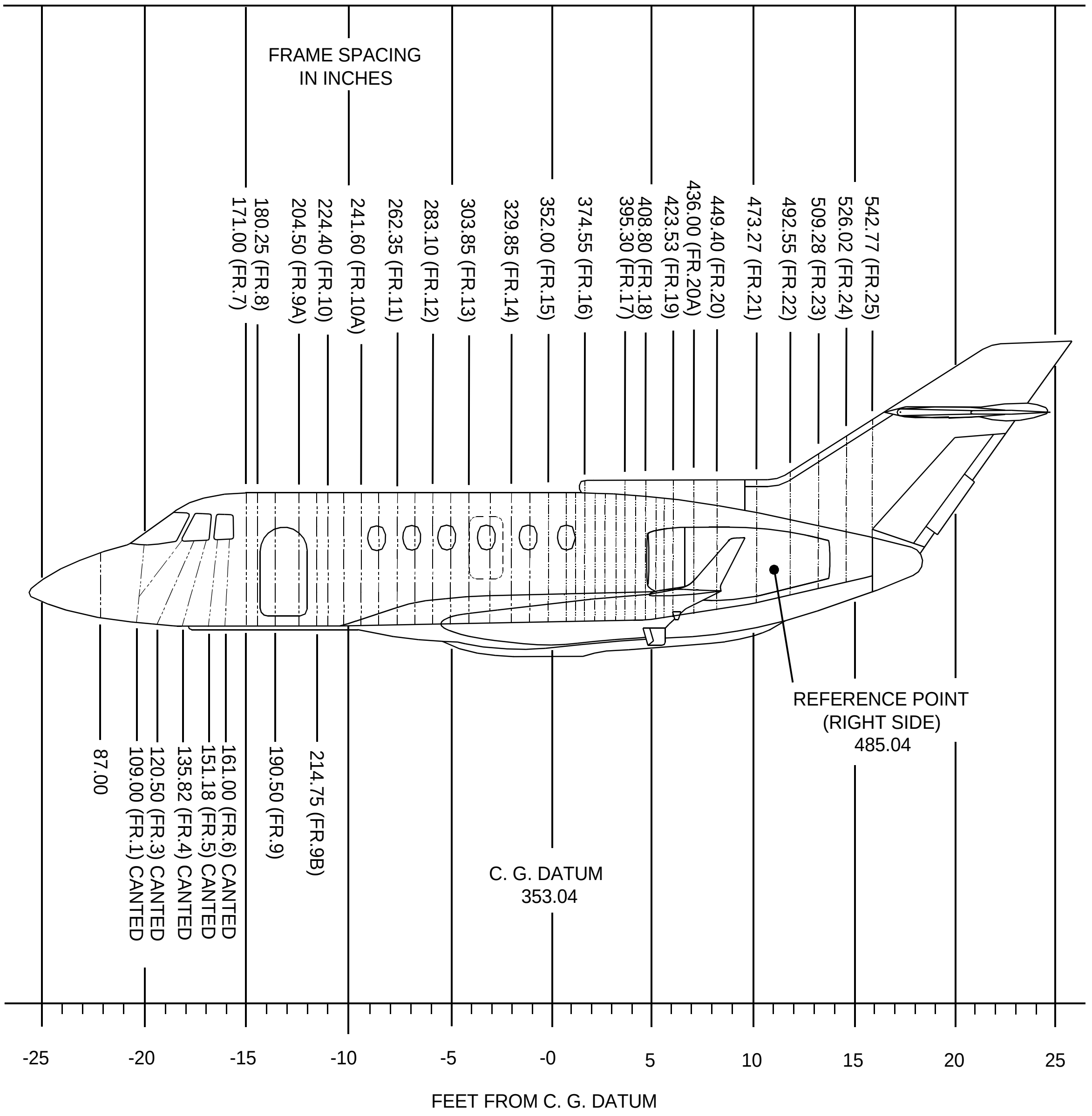
Loading and Flight Envelope - Pounds/Feet
Figure 5



(Landing Gear Retraction Moment Change is Negligible)

Loading and Flight Envelope - Kilograms/Meters
Figure 6

FUSELAGE STATION LOCATIONS



NOTE: REFER TO CONVERSION FACTORS FOR METRIC EQUIVALENT.

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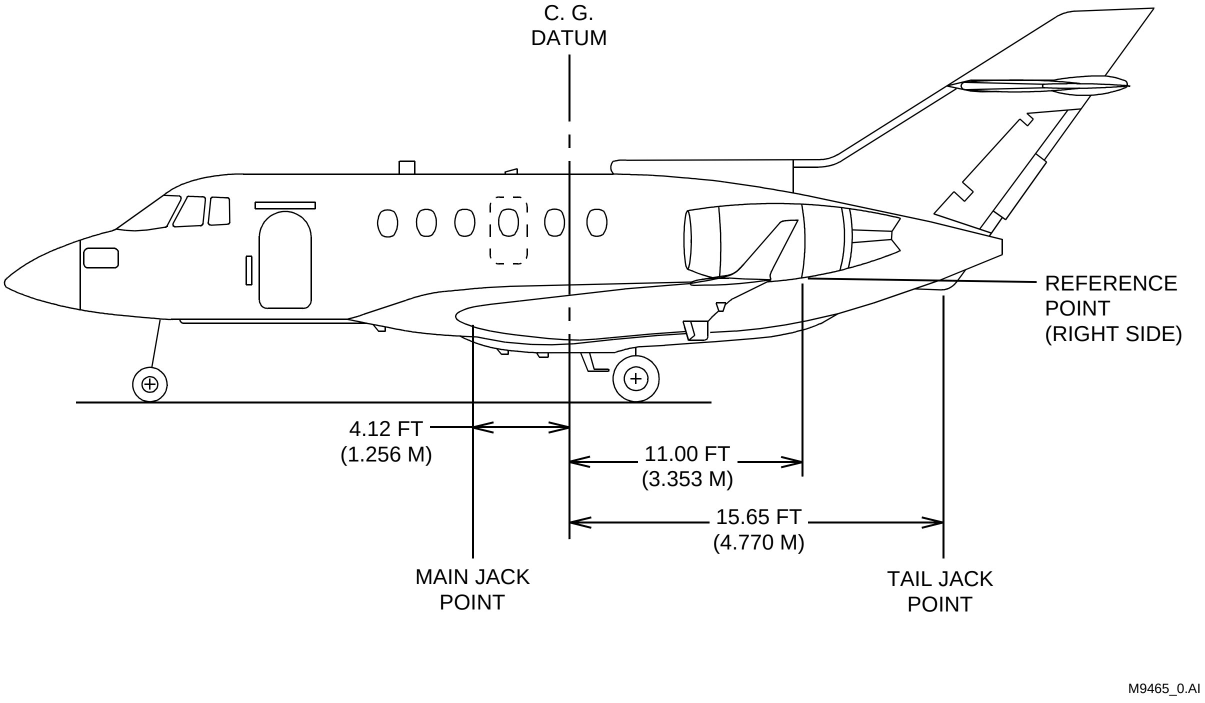
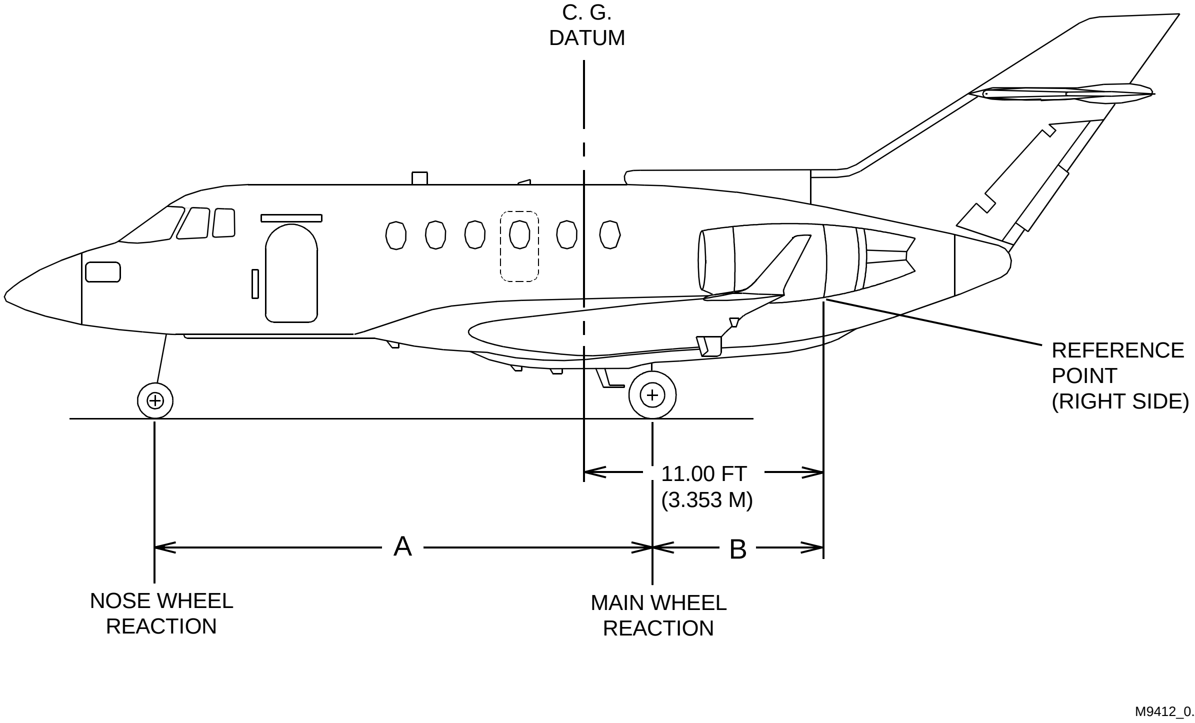
Fuselage Station Locating Diagram
Figure 7

AIRPLANE WEIGHING and RETRACTION POINTS



Jack Point Weighing
Figure 8

AIRPLANE WEIGHING and RETRACTION POINTS (continued)



Wheel Weighing
Figure 9

Hawker Beechcraft

Hawker 800XP

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0071
Revision 3
CONFIGURATION DEVIATION LIST
(CDL)
for
AIRPLANES EQUIPPED WITH HAWKER BEECHCRAFT CORPORATION WINGLETS

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL

P/N 140-590032-0005

Applicable Only to Airplanes Equipped with Hawker Beechcraft Corporation Winglet Kits 140-1701, 140-1703 or 140-1704

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: ....

for Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 5/24/07 ....

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0071
for
CONFIGURATION DEVIATION LIST (CDL)

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0071
for
CONFIGURATION DEVIATION LIST (CDL)

LOG OF REVISIONS

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
0	1 of 14 thru 14 of 14	Original Issue	4/10/06	WC Schuntstach
1	1 of 14 thru 14 of 14	Revised page headers to reflect the Hawker Beechcraft Corporation name change. Revised page footers.	5/29/07	
	1 of 14	Revised Title page to change title to "Airplanes Equipped with Hawker Beechcraft Corporation Winglets." Added Winglet Kit applicability to Title page.		
	2 of 14	Revised LOEP for Revision 1.		
	3 of 14	Revised Log of Revisions with Revision 1 information.		
	5 of 14	Added Kit 140-1704 to Introduction. Updated title reference to AFM Supplement 140-590032-0069.		
2	1 of 20 thru 20 of 20	Revised all page footers and headers for Revision 2.	5/29/09	
	1 of 20	Title page; added Revision 2 in the title. Revised the winglet text. Added Hawker Beechcraft Corporation trademark statement in page footer.		
	2 of 20	Revised Supplement Status and LOEP for Revision 2.		

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
2	3, 4 & 5 of 20	Revised LOR for Revision 2.		
	6 of 20	Intentionally left blank.		
	7 of 20	CONTENTS; added WING ZONES - REAR VIEW, FLIGHT COMPARTMENT and ALL CONTROL SURFACES or STRUCTURAL AREAS. Renamed Figures 1, 2, 3 & 4 and revised all page numbers for additional pages. Moved INTRODUCTION header and text.		
	8 of 20	Intentionally left blank.		
	9 of 20	Moved INTRODUCTION and text to the top of this page. first paragraph; revised "Kit Nos." to read "Kits". Third paragraph; revised "panels" to read "items". Fourth paragraph; revised "Aircraft Maintenance Manual" to read "Aircraft Flexible Maintenance Schedule". SECTION 2 - LIMITATIONS; revised "EXCEPTION" to read "EXCEPTIONS". Limitation 2.; Added information for bonding straps and rudder gust lock flapper door. Shifted data. Added continued arrow to the bottom of the page.		
	10 of 20	Added SECTION 2 - LIMITATIONS (continued) to the top of the page. Limitation 4.; revised "pilot in command" to read "pilot-in-command" and "panel(s)" to read "item(s)". Limitation 5.; added two commas and revised "panel(s)" to read "item(s)". Limitation 6.; revised "cockpit" to read "flight compartment". Limitation 7.; revised "panel" to read "item" and "panels" to read "items". Shifted data.		

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
2	10 of 20 cont.	Moved SECTION 4 header and SECTION 5 header and text to this page. SUB-SECTION 5.05 - GENERAL, first paragraph; revised "panel" to read "item". Shifted data.		
	11 of 20	FUSELAGE ZONES table; added bonding straps information.		
	12 of 20	TAILPLANE and ELEVATOR ZONES, Added bonding straps and rudder/rudder tab information. Added replacement information for Vortex Generators. Shifted data.		
	13 of 20	WING ZONES - UPPER SURFACE table, revised "airbrake" to "air brake" in four places. Shifted data.		
	14 of 20	Added WING ZONES - REAR VIEW table with bonding straps information.		
	15 of 20	Added FLIGHT COMPARTMENT table with rudder gust lock flapper door information. Added ALL CONTROL SURFACES or STRUCTURAL AREAS table with static dischargers information.		
	16 of 20	Reformatted Figure title.		
	17 of 20 thru 19 of 20	Revised and reformatted Figure titles. Shifted data.		
	20 of 20	Shifted data.		
3	1 of 20 thru 20 of 20	Revised all page footers for Revision 3.	12/23/10	
	1 of 20	Title page; revised for Revision 3.		
	2 of 20	Revised Supplement Status and LOEP for Revision 3.		
	3 of 20 thru 6 of 20	Revised LOR for Revision 3.		

Rev No.	Page No(s)	Description	Date of Revision	FAA Approved
3	9 of 20	Section 2 - Limitations; under Limitation 2, added a reference to exclude the Bonding Straps in the T2 area from the limitation.		
	15 of 20	All Control Surfaces or Structural Areas; under Area Location, added "& T2".		

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INTRODUCTION

This supplement applies only to Hawker 800XP Pro Line 21 airplanes equipped with Hawker Beechcraft Corporation Kits 140-1701, 140-1703 or 140-1704 which provide for the installation of winglets.

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable except where superseded by the information given in this supplement.

NOTE: This supplement provides Configuration Deviation List (CDL) information for airplanes with winglets only and must be accompanied by AFM supplement P/N 140-590032-0069 for AIRPLANES EQUIPPED WITH HAWKER BEECHCRAFT CORPORATION WINGLETS. Both supplements must be inserted into the AFM Section 7 - SUPPLEMENTS as per the supplement Instruction Sheets.

This supplement contains the Configuration Deviation List (CDL) which imposes additional requirements for operation of the airplane with certain items missing.

The airframe is divided into discrete areas, as shown in Figure 1, and each panel in the area is given an identification number as shown in Figures 2 thru 4. The panel identification numbers used are the same panel numbers identified in the Aircraft Flexible Maintenance Schedule.

SECTION 1 - GENERAL

No change.

SECTION 2 - LIMITATIONS

Limitations resulting from a missing item, as specified in the REMARKS AND/OR EXCEPTIONS column, must be observed in addition to the normal limitations in Section - 2 LIMITATIONS of the Airplane Flight Manual. The limitations are as follows:

1. No more than one panel from any one area (see Figure 1) may be missing unless specific combinations are listed in this supplement. Unless otherwise specified, panels from different areas may be missing.

2. Where performance penalties are listed as negligible, no more than three such items may be missing. This limitation does not apply to vortex generators in the areas T1 or T2. The limitations for these vortex generators are shown in the TAILPLANE and ELEVATOR ZONE table in Sub-section 5.05 of this supplement.

   This limitation does not apply to bonding straps in area F2, F3, W1, W2, T1 and T2. The limitations for these bonding straps are shown in the FUSELAGE ZONE, WING ZONE - REAR VIEW, and TAILPLANE and ELEVATOR ZONES tables in Sub-section 5.05 of this supplement. This limitation also does not apply to the rudder gust lock flapper door in area F2. The limitations for this item are shown in the FLIGHT COMPARTMENT table in Sub-section 5.05 of this supplement.

3. Unless specific performance effects are defined for combinations of missing items, all performance effects for individual items are cumulative.

Continued Next Page ⟶

SECTION 2 - LIMITATIONS (continued)

4. The pilot-in-command shall be notified of each operation with a missing item(s) by listing the missing item(s) in the flight or dispatch release document.

5. The operator shall list, in the airplane log book, an appropriate notation covering the missing item(s) on each flight.

6. The associated limitations must be listed on a placard affixed in the flight compartment in clear view of the pilot-in-command and other appropriate crew member(s).

7. If an additional item is lost in flight, the airplane may not depart the airport at which it subsequently lands until it complies with the requirements of this supplement. A ferry permit may be issued to allow the airplane to be flown to the first station where replacement or repair of the items can be made.

SECTION 3 - EMERGENCY PROCEDURES

No change.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

No change.

SECTION 5 - PERFORMANCE

SUB-SECTION 5.05 - GENERAL

Where a missing item results in a performance effect on the airplane, the effect is given in the REMARKS AND/OR EXCEPTIONS column of the appropriate list.

Unless specific performance effects are defined for combinations of missing items, all performance effects for individual items are cumulative.

FUSELAGE ZONES

			NORMAL CONFIGURATION		
				MINIMUM REQUIRED	
AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION			REMARKS AND/OR EXCEPTIONS
F2 & F3	---------- ----------	Bonding Straps - Nose and Main Gear Doors.	4	0	May be broken or missing, provided airplane is not flown within 50 nautical miles of active or potential lightning activity.
F4	F159	Aft Fairing - Attached to the ventral tank off of the access door.	1	0	The performance decrement is negligible.
F4	F164	Access panel for bonding.	1	0	The performance decrement is negligible.
F4	F165	Access panel to jacking point.	1	0	The performance decrement is negligible.
F4	F166	Access to autopilot servo motor.	1	0	The performance decrement is negligible.
F4	F167	Fuel filling access panel to rear ventral tank.	1	0	The performance decrement is negligible.
F4	F168	Oxygen charging point access panel.	1	0	The performance decrement is negligible.

TAILPLANE and ELEVATOR ZONES

AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION	NORMAL CONFIGURATION	MINIMUM REQUIRED	REMARKS AND/OR EXCEPTIONS
T1	T14L T15R	Access panels for elevator controls.	2	1	The performance decrement is negligible.
T1	T16L T17R	Access panels to rudder trim controls.	2	1	The performance decrement is negligible.
T1	T18	Hinged cover for access to rudder trim con-rod/tab connection.	1	0	Not in icing conditions. The performance decrement is negligible.
T1	T34L	Vertical stabilizer access to VHF cable clamp.	1	0	The performance decrement is negligible.
T1	---------- ----------	Vortex generators - Horizontal Stabilizer	2	0	The performance decrement is negligible. Replacement is made at the next scheduled maintenance check.
T2	---------- ----------	Vortex generators - Horizontal Stabilizer	2	0	The performance decrement is negligible. Replacement is made at the next scheduled maintenance check.
T1	---------- ----------	Vortex generators - Elevator	4	0	The performance decrement is negligible. Replacement is made at the next scheduled maintenance check.
T2	---------- ----------	Vortex generators - Elevator	4	0	The performance decrement is negligible. Replacement is made at the next scheduled maintenance check.
T1	---------- ----------	Bonding straps - Rudder and Rudder Tabs.	8	5	One may be broken or missing per surface, provided the condition of the remaining straps is confirmed to be satisfactory prior to each departure.

WING ZONES - BOTTOM SURFACE

AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION	NORMAL CONFIGURATION	MINIMUM REQUIRED	REMARKS AND/OR EXCEPTIONS
W1	W425	Panel covering hydraulic pipes in the wheel well.	1	0	No performance decrement because panel is internal to airframe.
W2	W325	Panel covering hydraulic pipes in the wheel well.	1	0	No performance decrement because panel is internal to airframe.

WING ZONES - UPPER SURFACE

AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION	NORMAL CONFIGURATION	MINIMUM REQUIRED	REMARKS AND/OR EXCEPTIONS
W1	W132	Fairing covering forward portion of air brake outboard hinge.	1	0	Only if the rear portion of the hinge cover is removed. The performance decrement is negligible.
W2	W232		1	0	
W1	W133	Fairing covering aft portion of air brake outboard hinge.	1	0	The performance decrement is negligible.
W2	W233		1	0	
W1	W134	Fairing covering forward portion of air brake inboard hinge.	1	0	Only if the rear portion of the hinge cover is removed. The performance decrement is negligible.
W2	W234		1	0	
W1	W135	Fairing covering aft portion of air brake inboard hinge.	1	0	The performance decrement is negligible.
W2	W235		1	0	
W1	----------	Vortex Generators	24	22	The performance decrement is negligible. Replacement is made at next scheduled maintenance check.
W2	----------		24	22	

WING ZONES - REAR VIEW

			NORMAL CONFIGURATION		
				MINIMUM REQUIRED	
AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION			REMARKS AND/OR EXCEPTIONS
W1 & W2	---------- ----------	Bonding straps - Ailerons and Aileron Trim Tabs.	12	4	Two may be broken or missing per surface, provided the condition of the remaining straps is confirmed to be satisfactory prior to each departure.
W1 & W2	---------- ----------	Bonding straps - Air brakes (Upper & Lower)	8	4	One may be broken or missing per surface, provided the condition of the remaining straps is confirmed to be satisfactory prior to each departure.
W1 & W2	---------- ----------	Bonding straps - Flaps	4	2	One may be broken or missing per surface, provided the condition of the remaining straps is confirmed to be satisfactory prior to each departure.

FLIGHT COMPARTMENT

AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION	NORMAL CONFIGURATION	MINIMUM REQUIRED	REMARKS AND/OR EXCEPTIONS
F2	---------- ----------	Rudder gust lock flapper door - Flight compartment left side floor area.	1	0	Flapper door may be inoperative or missing, provided a cover (such as tape) is installed to protect against contamination or damage by entry of foreign objects.

ALL CONTROL SURFACES or STRUCTURAL AREAS

AREA LOCATION	PANEL IDENT NUMBER	DESCRIPTION	NORMAL CONFIGURATION	MINIMUM REQUIRED	REMARKS AND/OR EXCEPTIONS
W1 & W2 and T1 & T2	---------- ----------	Static Dischargers - All control surfaces or structural areas.	All	All but one from each surface or area.	One discharger from each control surface or structural area may be damaged or missing.

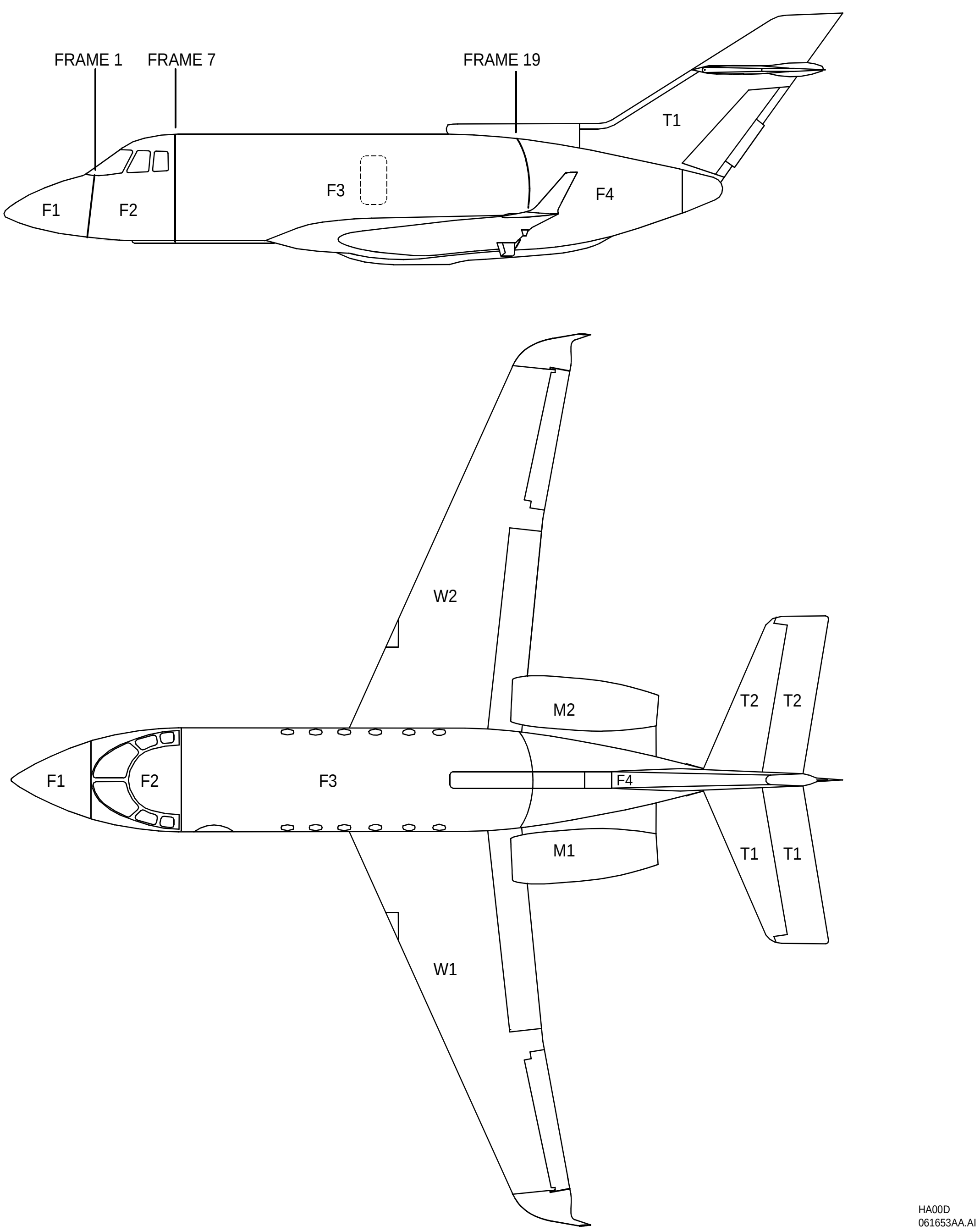
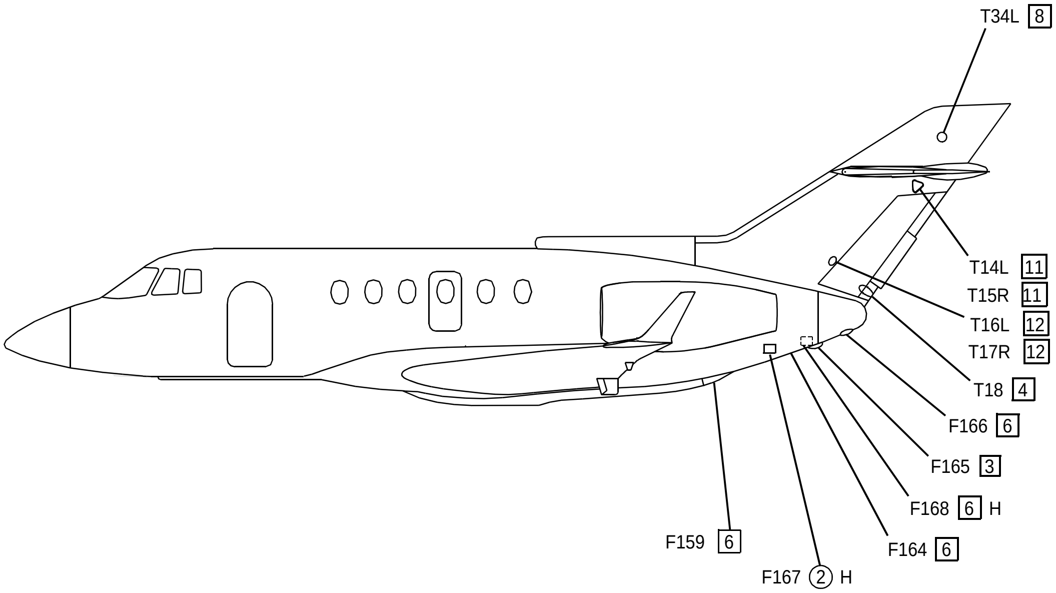


Figure 1
Area Locations



PANEL IDENTIFICATION CODES

F 101 4 — TYPE & NUMBER OF FASTENERS
PANEL NUMBER
AREA IDENTIFIER

PANEL FASTENER SYMBOLS

○ QUICK OPENING (SUCH AS HARTWELL FASTENERS) - NO TOOL REQUIRED

△ QUICK OPENING (SUCH AS CAMLOC FASTENERS) - TOOL REQUIRED

□ BOLTED PANEL - TOOL REQUIRED

THE NUMERAL INSIDE EACH SYMBOL DENOTES THE NUMBER OF FASTENERS SECURING THE PANEL. AN "H" ADJACENT TO THE SYMBOL INDICATES THAT THE PANEL IS HINGED.

M9414_0.AI

Figure 2

Panel Identification Numbers - Tail and Aft Fuselage

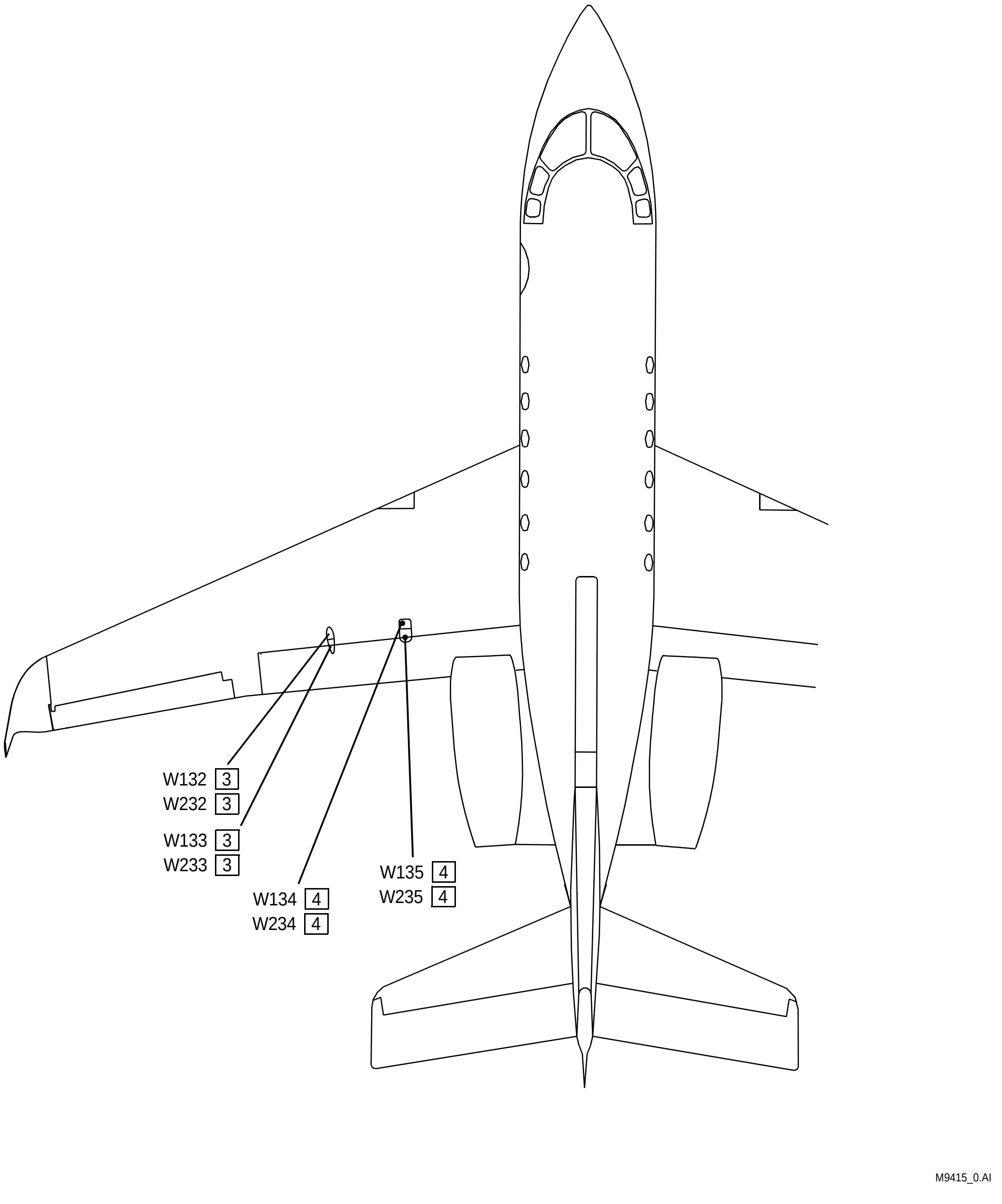
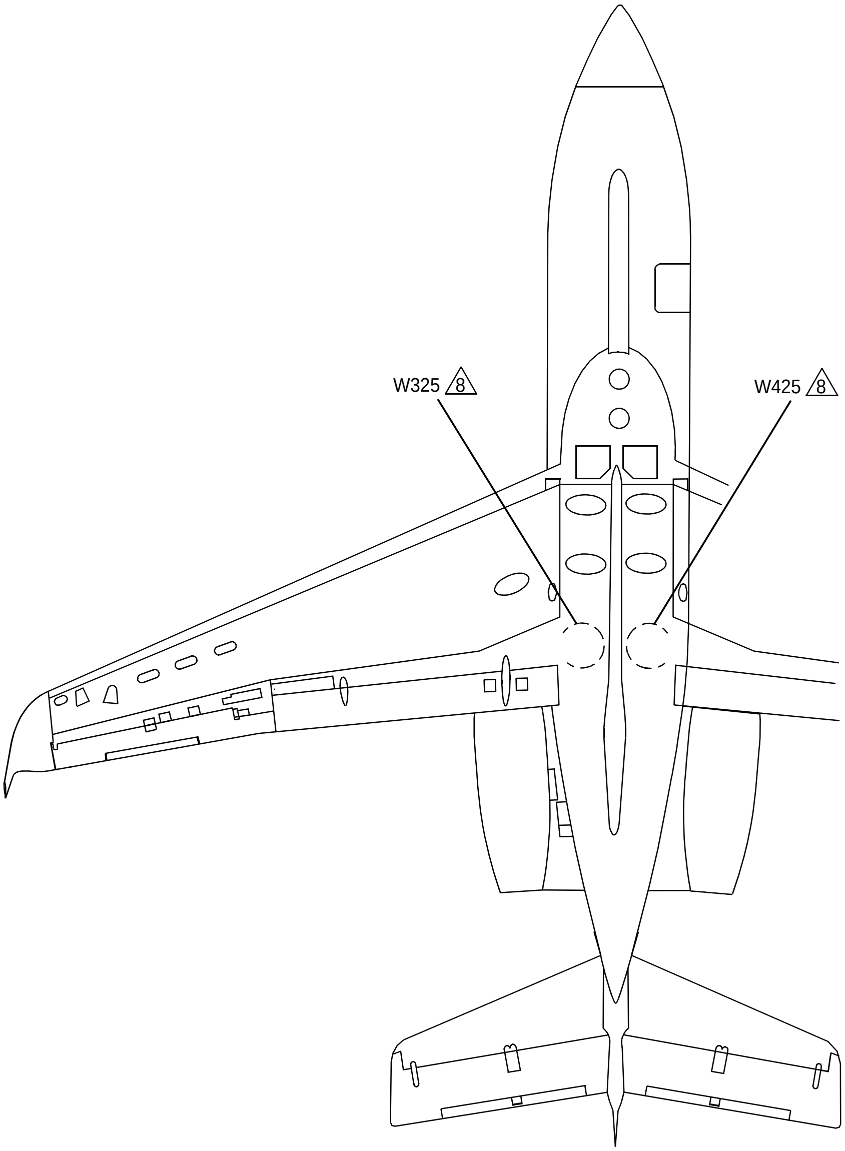


Figure 3

Panel Identification Numbers - Wing



M9416_0.AI

Figure 4
Panel Identification Numbers - Inboard Wing

SECTION 6 - WEIGHT & BALANCE

No change.

Hawker Beechcraft

Hawker 800XP

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0087
REVISION 1
for
COLLINS FMS-6000
FLIGHT MANAGEMENT SYSTEM
Version 3.3.1

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL
P/N 140-590032-0005
for
Hawker 800XP equipped with Service Bulletin SB 34-3836 and
Collins FMS-6000 Software Version 3.3.1.

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: DM Baker for ....
Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 5/18/07 ....

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
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for
COLLINS FMS-6000
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Version 3.3.1

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* 10 of 12	Revised	1
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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0087
Revision 1
for
COLLINS FMS-6000
FLIGHT MANAGEMENT SYSTEM
Version 3.3.1

LOG OF REVISIONS

Rev No.	*Page No(s)*	*Description*	*Date of Revision*	*FAA Approved*
0	1-12	Original Issue	5/18/07	
1	1 of 12 thru 12 of 12	Revised page headers and footers on all pages to reflect Revision 1 status.	9/19/2011	
	1 of 12	Revised Title Page for Revision 1 and updated Copyright statement.		
	2 of 12	Changed Supplement Status and List of Effective Pages to reflect Revision 1 status. Added statement and asterisks to indicate revised pages in List of Effective Pages.		
	3 of 12 and 4 of 12	Updated Log of Revisions with Revision 1 information.		
	5 of 12	Under INTRODUCTION, added a comma. Under NAVIGATION CAPABILITIES, added parentheses to text.		
	6 of 12	Under Step 1, removed four commas and added one comma. Under Step 2, removed three commas and added one comma. Under Step 4, added two periods.		

LOG OF REVISIONS (continued)

Rev No.	*Page No(s)*	*Description*	*Date of Revision*	*FAA Approved*
1	7 of 12	Under Step 5, revised text to remove equipment table and refer P-RNAV equipment requirements to Section 2 - LIMITATIONS of the Airplane Flight Manual.		
	8 of 12	Revised format of WARNING. Under General Step 5, changed "data base" to "database".		
	10 of 12	Added periods after "No Change" statements. Under NOTES, removed a comma in 1, added a comma in 2, and removed a comma in 3.		
	12 of 12	Added periods after "No Change" statements.		

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INTRODUCTION

This supplement is applicable to Hawker 800XP airplanes equipped with Service Bulletin 34-3836 and Collins FMS-6000 Software Version 3.3.1.

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable, except where superseded by the information given in this supplement.

The new FMC-6000 module incorporates software changes to enhance performance to support customer requirements. No modifications to the hardware have been made.

SECTION 1 - GENERAL

NAVIGATION CAPABILITIES

The Collins FMS-6000 Flight Management System is approved under Technical Standard Order (TSO) C115b and C129a Class B1/C1. When the FMS-6000 is receiving appropriate GPS signals, it meets the accuracy specifications for the following operations (provided a second FMS is also installed for those operations requiring FMS):

NAVIGATION CAPABILITIES (continued)

1. Oceanic and Remote:

   In accordance with AC 20-130A and AC 20-138A, two FMS-6000 systems must be operating and receiving usable signals from two operating Collins GPS sensors and used in conjunction with the Collins prediction program, CPN 832-3443-008, Rev - or latest version, or a single FMS-6000 used in conjunction with the Collins prediction program, CPN 832-3443-008, Rev - or latest version, on routes approved for single GPS navigation.

   NOTE: This does not constitute an operational approval.

2. North Atlantic (NAT) Minimum Navigational Performance Specifications (MNPS) Airspace:

   In accordance with the criteria of AC 91-49 and AC 20-138A, two FMS-6000 systems must be operating and receiving usable signals from two operating Collins GPS sensors and used in conjunction with the Collins prediction program, CPN 832-3443-008, Rev - or latest version, or a single FMS-6000 used in conjunction with the Collins prediction program, CPN 832-3443-008, Rev - or latest version, on routes approved for single GPS navigation.

   NOTE: This does not constitute an operational approval.

3. RNP-10 Airspace:

   In accordance with the criteria of FAA Order 8400.12A without time limitations, the FMS-6000 meets the minimum requirements for Required Navigation Performance-10 (RNP-10). Two FMS-6000 systems must be operating and receiving usable signals from two operating Collins GPS sensors and used in conjunction with the Collins prediction program, CPN 832-3443-008, Rev - or latest version.

   NOTE: This does not constitute an operational approval.

4. Enroute and Terminal, Including BRNAV / RNP-5:

   In accordance with AC 20-130A, AC 90-96A and JAA AMJ 20 x 2, Leaflet 2, Revision 1, the FMS-6000 must be receiving usable signals from one or more of the following:

   - One VOR/DME and multiple DMEs with autotune enabled.
   - One GPS sensor and is not in Dead Reckoning (DR).

   NOTE: This does not constitute an operational approval.

5. PRNAV European Airspace Operations:

   It has been demonstrated that the FMS-6000 is capable of PRNAV operations in accordance with the criteria of JAA TGL-10 and AC 90-96A provided the FMS is not in Dead Reckoning ("FMS DR" displayed on the PFD, MFD or CDU). PRNAV operations in some terminal areas may require operating dual FMS equipment.

NAVIGATION CAPABILITIES (continued)

Operations on PRNAV routes require:

a. The crew select the PRNAV route from the FMS navigational database.

b. The navigation database supplier has a Type 2 LOA that is currently valid for the intended operations. Navigation database Alerts and NOTAMS may be associated with the intended operations and the Type 2 LOA.

Refer to Section 2 - LIMITATIONS of the Airplane Flight Manual for the required PRNAV equipment list.

6. Non-Precision Approach:

In accordance with AC 20-130A, AC 20-138A, AC 90-94A and TSO C129a Class B1/C1, the GPS APPR annunciation or APPR annunciation must be illuminated at the final approach fix (as determined by the approach being flown) provided the FMS-6000 is receiving adequate usable sensor inputs.

7. RNAV/SIDS/STARS:

The FMS is capable of operations on U.S. Area Navigation (RNAV) routes, Standard Instrument Departures (SIDS), and Standard Terminal Arrival Routes (STARS) in accordance with the criteria of FAA AC 90-100, provided that:

a. The FMS and GPS have been installed and approved for IFR use in accordance with AC 20-130A.

b. The FMS is not in Dead Reckoning (FMS DR not displayed on the PFD, MFD, or CDU).

c. The crew has entered NOTAM'd navaids on the CDU VOR/DME CONTROL page.

d. The VORs have been disabled for use on the VOR/DME CTL page of the FMS.

e. The FMS is receiving usable GPS (GNSS) signals (NO GPS RAIM, GPS NOT AVAILABLE, GPS-FMS DISAGREE not displayed on CDU) for procedures requiring GPS (GNSS) or for operations based on GPS (GNSS) capability. GPS is required for navigation.

8. RNAV Approach with Barometric VNAV:

In accordance with FAA AC 90-97, the FMS is a TSO-C129a Class B1/C1 GPS sensor approved under FAA AC 20-130A. For a particular approach, GPS must be an active component (NO GPS RAIM, GPS NOT AVAILABLE, GPS-FMS DISAGREE not displayed on CDU) of the aircraft's navigation solution.

In accordance with FAA AC 20-129, the VNAV system is approved for approach operations.

NAVIGATION CAPABILITIES (continued)

9. FMS VNAV Operations:

   (VFR / IFR enroute, terminal and approach FMS VNAV operation, including barometric VNAV operation) in accordance with AC 20-129 and AC 90-97. The FMS-6000 provides the necessary navigation performance and is compatible with RNAV approaches published in accordance with FAR Part 97, including LNAV/VNAV DA minimums, provided the FMS-6000 is receiving adequate usable sensor inputs.

SECTION 2 - LIMITATIONS

AVIONICS LIMITATIONS

FLIGHT MANAGEMENT SYSTEM

General

1. The Collins FMS-6000 Flight Management System for the Hawker 800XP Operator's Guide, No. 523-0780705, dated 13 July 05, or latest revision, appropriate for the system and software installed must be immediately available to the flight crew during all operations.

2. The system program number displayed on the STATUS page must be SCID 832-4117-087.

3. The Performance database displayed on the STATUS page must be CPN: 815-3198-002.

WARNING: WITH THE FAILURE OF AN FMS IN A DUAL FMS INSTALLATION, ALL INPUT DATA PROVIDED TO THE V_{SPEED} DATA MUST BE VERIFIED FOR ACCURACY AND THE RESULTING DATA (V_{SPEEDS} , LANDING FIELD LENGTH, LANDING WEIGHT LIMITS, ETC.) MUST BE VERIFIED AGAINST THE AFM FOR USE.

WARNING: WITH THE FAILURE OF AN FMS IN A DUAL FMS INSTALLATION, V_{SPEEDS} CANNOT BE POSTED TO THE AFDS FROM THE FMS, BUT MUST BE MANUALLY ENTERED FROM THE DISPLAY CONTROL PANELS.

4. The V_{SPEED} database displayed on the STATUS page must be CPN: 815-2850-003.

5. IFR enroute and terminal navigation is prohibited unless the pilot verifies the currency of the database or verifies each selected waypoint for accuracy by reference to current approved data.

6. As required by the operating rules applicable to the specific type of operation, the airplane must have additional navigation equipment appropriate to the intended route and it must be operational.

7. During periods of Dead Reckoning, as indicated by the FMS DR annunciation, the FMS shall not be used as the primary source of navigation.

8. Fuel display parameters are advisory only and do not replace the primary fuel quantity or fuel flow gauges for loading or range/reserve planning.

Vertical Navigation

1. When using FMS VNAV, the barometric altimeters must be used as the primary altitude reference for all operations.

2. VNAV approach guidance to a DA is not authorized if the reported surface temperature is below the Baro-VNAV minimum temperature limitation specified on the applicable approach procedure chart. The limitations of each individual approach plate may not apply to operations in regions where the controlling authority has approved the use of temperature compensation, provided the temperature compensation feature of the FMS is enabled.

3. When conducting instrument approach using LNAV/VNAV DA minimums, the flight director or autopilot must be used and VGP mode must be active.

4. Use of VNAV guidance for a V-MDA approach that includes a step-down fix between the final approach fix and missed approach point is prohibited.

5. Use of VNAV while conducting a missed approach procedure is prohibited.

Approach

1. FMS instrument approaches must be accomplished in accordance with approved instrument approach procedures that are retrieved from the FMS navigation database. The FMS database must incorporate the current update cycle.

2. The FMS with inputs from the GPS may only be used for approach guidance if the reference coordinate data system for the instrument approach is WGS-84 or NAD-83.

3. FMS instrument approaches must be conducted in the approach mode, the GPS integrity monitoring (when using GPS for approach guidance) must be available at the final approach fix, and the GPS APPR (green) or APPR (green) annunciation on the PFD must be illuminated.

4. When using FMS guidance for conducting instrument approach procedures that do not include "or GPS" in the title of the published procedure, the flight crew must verify that the procedure specified NAVAID and associated avionics are tuned and displayed.

5. Use of FMS guidance for conducting instrument approach procedures is prohibited with the FMS annunciation NO APPR (white or amber) illuminated.

6. ILS, LOC, LOC-BC, LDA, and SDF approaches using the FMS for approach guidance are prohibited.

7. When the approach at the destination is based on GPS guidance and an alternate airport is required by the applicable operating rules, it must be served by an approach based on other than GPS navigation, the airplane must have operational equipment capable of using that navigation aid, and the required navigation aid must be operational.

8. IFR non-precision approach approval is limited to published approaches within the U.S. National Airspace System. Approaches to airports in other airspace are not approved unless authorized by the appropriate governing authority.

9. The FMS-6000 is approved for FMS VFR approaches as a VFR pilot aid only.

SECTION 3 - EMERGENCY PROCEDURES

No change.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

No change.

Sub-section 4.10 - NORMAL PROCEDURES

Flight Management System

1. Refer to Collins FMS-6000 Flight Management System for the Hawker 800XP Operator's Guide, No. 523-0780705, dated 13 July 05, or latest revision, appropriate for the system and software installed.

All FMS annunciations are displayed on the applicable PFD and MFD.

NOTES:

1. *Display of "RWY" on the CDU LEGS page under the Altitude field does not necessarily provide VNAV guidance to 50 feet above the runway threshold or align the airplane with the runway.*
2. *Barometric VNAV guidance including the approach transition, final approach segment, and the missed approach procedure are not temperature compensated.*
3. *The pilot needs to monitor VNAV to assure the altitude constraints are met during VNAV operation where there is an altitude constraint at a waypoint with a course change greater than 90°.*

Sub-section 4.10 - NORMAL PROCEDURES (continued)

The following is a communication type list for the airport communication frequencies. These types of communication frequencies are displayed on the FREQUENCY DATA pages on the CDU.

Label	*Type*
ACC	Area Control Center
AIRLIFT CP	Airlift Command Post
APP	Approach
APP RDR	Director (Approach Radar)
ARR	Arrival
ARSA	Airport Radar Service Area
ASOS	Automated Surface Observing System
ATIS	Automatic Terminal Information Service
AWOS	Automated Weather Observing System
CLNC DEL	Clearance Delivery
CTL	Control
DEP	Departure Control
FSS	Flight Service Station
GATE	Gate Control
GCO	Ground Communication Outlet
GND	Ground
HELI	Helicopter
INFO	Information
MULTICOM	Multicom
OPS	Operations
PRE TAXI	Clearance, Pre Taxi
RADIO	Radio
RAMP	Ramp Control
RDR	Radar
RFSS	Remote Flight Service Station
TCA	Terminal Control Area
TMA	Terminal Control Area
TRML	Terminal
TRML CTL	Control Area (Terminal)
TRSA	Terminal Radar Service Area
TWEB	Transcribed Weather Broadcasts
TWR	Tower
UAC	Upper Area Control
UNICOM	Aeronautical Advisory Service
VOLMET	Meteorological Information for Aircraft in Flight

SECTION 5 - PERFORMANCE

No change.

SECTION 6 - WEIGHT & BALANCE

No change.

Hawker Beechcraft

Hawker 800XP

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0091
for
COLLINS GPS-4000S GLOBAL POSITIONING SYSTEM

THIS SUPPLEMENT IS APPLICABLE TO

FAA APPROVED AIRPLANE FLIGHT MANUAL

P/N 140-590032-0005

for

Airplanes which have complied with Service Bulletin SB 34-3860

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: M Baker ....
for
Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 1/3/08 ....

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0091
for
COLLINS GPS-4000S
GLOBAL POSITIONING SYSTEM

Supplement Status	***Date***
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7 of 8	Original	0
8 of 8	Original	0

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0091
for
COLLINS GPS-4000S
GLOBAL POSITIONING SYSTEM

LOG OF REVISIONS

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SECTION 5 - PERFORMANCE .... 7 of 8

SECTION 6 - WEIGHT & BALANCE .... 7 of 8

INTRODUCTION

This supplement is applicable to Hawker 800XP Pro Line 21 airplanes which have complied with Service Bulletin SB 34-3860.

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable except where superseded by the information given in this supplement.

SECTION 1 - GENERAL

NAVIGATION CAPABILITIES

The GPS-4000S Global Positioning System (GPS) is a TSO-C145a navigation sensor. The GPS is designed to acquire Radio Frequency (RF) transmissions from the Global Positioning Satellites. The GPS uses the RF transmissions to calculate the aircraft Position, Velocity, and Time (PVT) data. The GPS outputs the PVT data for use by an external navigation computer (i.e. Flight Management Computer). In addition to receiving signals from the GPS satellites, the unit is designed to also receive signals from the Satellite Based Augmentation System

NAVIGATION CAPABILITIES (continued)

(SBAS), such as the United States Wide Area Augmentation System (WAAS). The application of the correction and integrity data provided by the SBAS enables the GPS-4000S to provide augmented PVT data with higher accuracy, availability and integrity than that provided by the GPS-4000 and GPS-4000A.

The Satellite Based Augmentation System (SBAS) consists of ground reference stations, master stations, uplink stations, and geostationary communications satellites. The ground reference stations are surveyed very accurately. The ground reference stations compare the known location with the received GPS satellite signals to detect errors. The data collected by the ground reference stations is provided to the master station. The master station generates the augmentation signals that allow the GPS receivers to remove errors in the GPS signals. The master station provides the data to the uplink stations. The uplink stations transmit the data to the geostationary communications satellites. The geostationary communications satellites output the correction and integrity data on a GPS-like signal. The GPS-4000S reserves two channels to receive the SBAS data. The GPS-4000S receives the correction data to the GPS signal and calculates a more accurate position solution. When in the SBAS coverage area, the GPS-4000S relies on the SBAS signal to communicate satellite defects.

SECTION 2 - LIMITATIONS

No change.

SECTION 3 - EMERGENCY PROCEDURES

No change.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

No change.

Sub-section 4.10 - NORMAL PROCEDURES

1. For US RNAV routes, SIDs and STARs, an approved TSO-145a WAAS receiver installation (GPS-4000S) removes the requirement to run a pre-flight prediction of RAIM availability along the intended route if no satellites are NOTAM’d as out of service over the intended route.
2. There is no change to existing authorizations for non-WAAS approach operations.

NOTE: PRNAV and BRNAV operations outside of the U.S. utilizing GPS as the only navigation sensor require the following pre-flight planning:

- During the pre-flight planning phase, the crew must confirm, for the intended flight (route and time), the availability of receiver autonomous integrity monitoring (RAIM) with the latest information from the U.S. Coast Guard giving details of satellite non-availability (see http://www.navcen.uscg.gov). The U.S. Notices to Airmen (NOTAM) Office also provides satellite non-availability data.

Sub-section 4.10 - NORMAL PROCEDURES (continued)

- The confirmation of the availability of RAIM should be obtained from the Collins Pre-Departure GPS Coverage Predictor Program, CPN 832-3443-008, Rev-, or later version. Dispatch should not be made in the event of predicted continuous loss of RAIM of more than 5 minutes for any part of the intended flight. The use of the EUROCONTROL AUGUR tool may be used to satisfy this requirement. See http://augur.ecacnav.com/.

SECTION 5 - PERFORMANCE

No change.

SECTION 6 - WEIGHT & BALANCE

No change.

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Hawker 800XP

INSTRUCTION SHEET

FAA Approved Airplane Flight Manual Supplement
P/N 140-590032-0115
for
Airplanes Equipped with Rockwell Collins FMS-6000 Flight Management System Version 4.0
WAAS/LPV

November 3, 2009

This Supplement is Applicable to the Following Airplane Flight Manual:

P/N 140-590032-0005

INSTRUCTIONS

1. Turn to SECTION - 7 SUPPLEMENTS and compare the date of the existing LOG OF SUPPLEMENTS page with the date of the enclosed LOG OF SUPPLEMENTS page.

   Retain the LOG OF SUPPLEMENTS page that has the later date and discard the older LOG OF SUPPLEMENTS page. If required, the latest LOG OF SUPPLEMENTS can be printed by using the HBC website at: http://www.hawkerbeechcraft.com/service_support/pubs/docs/nontechnical/140-590032-0005-los.pdf

2. Arrange the Supplements in SECTION - 7 SUPPLEMENTS, including this Supplement P/N 140-590032-0115, dated Nov 3, 2009, Original Issue, Pages 1 of 28 thru 28 of 28, in the order indicated on the LOG OF SUPPLEMENTS page.

   NOTE: If either of the following supplements are incorporated in Section 7 of the Airplane Flight Manual, the supplement must be removed.

   - *P/N 140-590032-0053 Collins FMS-6000 FLIGHT MANAGEMENT SYSTEM Version 3.0.3.*
   - *P/N 140-590032-0087 Collins FMS-6000 FLIGHT MANAGEMENT SYSTEM Version 3.3.1.*

3. After compliance with these instructions, this Instruction Sheet may be discarded.

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Hawker 800XP

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0115
for
ROCKWELL COLLINS FMS-6000
FLIGHT MANAGEMENT SYSTEM
Version 4.0 WAAS/LPV

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL
P/N 140-590032-0005
for
Hawker 800XP Airplane Serials 258541, 258556, 258567 and After
with Kit 149-3431 Installed

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: Kevin D Campbell

for Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 11/3/09

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0115
for
ROCKWELL COLLINS FMS-6000
FLIGHT MANAGEMENT SYSTEM
Version 4.0 WAAS/LPV

Supplement Status	Date
Original Issue	Nov 3, 2009

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0115
for
ROCKWELL COLLINS FMS-6000
FLIGHT MANAGEMENT SYSTEM
Version 4.0 WAAS/LPV

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INTRODUCTION

This supplement is applicable to Hawker 800XP airplane Serials 25841, 258556, 258567 and After with Kit 149-3431 installed. These airplanes are equipped with Rockwell Collins FMS-6000 software version 4.0. The software version 4.0 provides a Wide Area Augmentation System and Localizer Performance with Vertical guidance (WAAS/LPV).

Refer to Operator's Guide FMS-6000 Version 4.0 Flight Management System applicable to the Hawker 800XP, Publication Number 523-0809284, 1st Edition, dated April 20, 2009, or latest revision.

For limitations, procedures and performance information not listed within this supplement, consult the basic Airplane Flight Manual.

SECTION 1 - GENERAL

ABBREVIATIONS and ACRONYMS

AR	Authorization Required
B-RNAV	Basic Area Navigation
CRS	Course
DA	Descent Altitude
FACF	Final Approach Course Fix
FAF	Final Approach Fix
FPLN	Flight Plan
GNSS	Global Navigation Satellite System
INHIB	Inhibit
INTC CRS	Intercept Course
IRS	Inertial Reference System
LNAV	Lateral Navigation
LOI	Loss Of Integrity
LPV	Lateral Precision with Vertical guidance
L/V	LNAV/VNAV
NAD	North American Datum
NM	Nautical Mile
NOTAM	Notices to Airmen
P-RNAV	Precision Area Navigation
RNP	Required Navigation Performance
RWY ID	Runway Identification
SAAAR	Special Aircraft and Aircrew Authorization Required
SBAS	Satellite Based Augmentation System
STAR	Standard Terminal Arrival Route
TOD	Top of Descent
VGP	Vertical Glide Path
WAAS	Wide Area Augmentation System
WGS	World Geodetic Survey

For additional abbreviations and acronyms, refer to the basic Airplane Flight Manual.

SYSTEM DESCRIPTION

FMS-6000 Version 4.0 WAAS/LPV

The system provides Wide Area Augmentation System (WAAS) functions and the capability to fly an instrument approach to LPV minimums with Flight Management System guidance. The FAA provides WAAS operation through a system of additional satellites and ground stations along with the United States GPS system.

The FMS allows operations to LPV minimums with the ability to interface to and display parameters from a SBAS-capable GNSS receiver. The baro VNAV approach function provides approach selection pages to accommodate LPV approach mode selections and annunciations.

The GNSS CTL pages on the CDU and GNSS STATUS pages on the MFD contain additional information supplied by the SBAS-capable receiver.

FMS-6000 Version 4.0 WAAS/LPV enhances the following functions:

- When cross-track distances relative to the desired track are small, the FMS lateral tracking gains are increased.
- Path capture performance for basic VNAV.

Long Range Cruise

The FMS has an optional feature that allows the operator to select Long Range Cruise. This function can be selected on the CDU ACT VNAV CRUISE 2/3 page.

To access the CDU ACT VNAV CRUISE 2/3 page, push the CDU PERF key. On the ACT VNAV CRUISE 2/3 page, the Line Select Key (LSK) labeled "CRZ SPD MODE" (Cruise Speed Mode) allows the sequential selection of the options "SEL/LRC/MCRZ". The active option is displayed in large green font.

The Long Range Cruise (LRC) speed provides a cruise speed schedule that allows the airplane to fly the longest range. In the LRC mode, the target speed is a function of airplane weight, which causes the target speed to continually vary as the airplane burns fuel. The FMS requires pilot inputs of airplane weight, cruise altitude and ISA deviation to calculate LRC.

Temperature Compensation

The Temperature Compensation function of the FMS can be accessed on the CDU INDEX 3/3 page, TEMP COMP.

When the temperatures are above or below normal, the TEMP COMP feature allows the pilot the option of having the FMS automatically compensate the altitude constraints and vertical path angles that are associated with the following phases:

- the approach procedure.
- the approach transition.
- the missed approach procedure.

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Temperature Compensation (continued)

When TEMP COMP is turned on and the proper supporting data is entered, the appropriate vertical path angles and altitude constraints (as retrieved from the navigational database) will be adjusted to compensate for temperature effects on the altimeter during the previously mentioned phases. However, if the constraint that is retrieved from the database is an altitude that is above the flight level transition altitude, then the altitude constraint will not be temperature compensated. Manually entered constraints are not automatically temperature compensated.

When the temperature-compensated leg in the approach becomes active (while the TEMP COMP feature is active), TMP © appears in a white display on the CDU annunciation line. The annunciation remains active as long as any approach leg (approach, approach transition or missed approach) is active. The annunciation is cleared when an approach leg is no longer active or if TEMP COMP is cancelled (either by turning the feature off or by deleting the airport temperature associated with the approach in the flight plan).

The use of temperature-compensated VNAV altitude constraints is controlled by the country's governing authority and air traffic control.

Display Scaling

When FMS is the selected NAV source, lateral and vertical full-scale deviations are listed below.

Full scale deviation is 2 dots deviation laterally or vertically from the center of the display.

SCALE	**OCEANIC** **OCEANIC Annunciated**	**EN ROUTE**	**TERMINAL** **TERM Annunciated**
Lateral	4 NM	2 NM	1 NM
Vertical	500 ft	500 ft	500 ft

SCALE	**VOR/DME/RNAV APPROACH** **APPR Annunciated**	**GPS APPROACH** **GPS APPR Annunciated**	**GPS SBAS APPROACH** **LPV APPR or L/V APPR Annunciated**
Lateral	1 NM	.3 NM	Angular Deviation
Vertical	250 ft	250 ft	Angular Deviation

The pilot may occasionally observe "jumps" in the lateral and vertical scale presentations as the airplane transitions through various phases of the approach.

Laterally..................................... OCEANIC to EN ROUTE
EN ROUTE to TERMINAL
TERMINAL to GPS or GPS SBAS APPROACH

Vertically.................................... EN ROUTE VNAV to GPS, GPS SBAS or
VOR/DME RNAV APPROACH

SECTION 2 - LIMITATIONS

AVIONICS LIMITATIONS

Flight Management System (Version 4.0)

1. The Operator's Guide FMS-6000 Version 4.0 Flight Management System applicable to the Hawker 800XP, Publication Number 523-0809284, 1st Edition, dated April 20, 2009, or latest revision, must be immediately available to the flight crew during all flight operations.

2. The system program number displayed on the STATUS page must be 832-4117-120.

3. The Performance database displayed on the STATUS page must be 815-3198-002.

4. The V_{SPEED} database displayed on the STATUS page must be 815-2850-003.

5. IFR en route and terminal navigation is prohibited unless the pilot has verified the currency of the database or verifies each selected waypoint for accuracy by reference to current approved data.

6. If the SBAS is not available or disabled, the airplane must have additional operational navigation equipment appropriate to the intended route.

7. During periods of dead reckoning, indicated by the FMS DR annunciation, the FMS shall not be utilized as the primary source of navigation.

8. The WGS-84 or NAD-83 coordinate reference datum in accordance with the criteria of AC 20-130A, AC 91-49 Change 1 and AC 20-138A must be used. Satellite navigation data is based upon use of only the GPS operated by the United States.

9. The display of Geometric Altitude, GNSS HT or GNSS ALT, shall not be referenced for compliance with published or controller-issued altitudes.

10. The FMS is authorized for SBAS operations with WAAS only.

11. The RWY ID must be verified on the TAKEOFF REF page after performing the FMS SYNC function.

12. The FMS V_{SPEED} data is the primary means of information provided two FMS computers are available.

13. The V_{SPEEDS}, required field length and other performance information for a specific operation, must be obtained from a single source; i.e., either the AFM, or FMS Takeoff and Landing Performance Data.

14. The FMS position must be checked for accuracy prior to use as a means of navigation.

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Flight Management System (Version 4.0 continued)

15. The FMS must not be used for navigation unless it is receiving suitable navigation information from one or more of the following:
    - VOR/DME.
    - A single DME with auto tune selected.
    - One GPS.
16. During oceanic, en route and terminal area operation with the FMS DR annunciator illuminated, the flight crew must verify the FMS position using VOR/DME raw data or other appropriate means.

Attitude Heading Reference System (AHRS)

All FMS navigation operations are approved within the U.S. National Airspace System and latitudes bounded by 60° North latitude and 60° South latitude at any longitude, with AHC attitude and heading reference system:

- Operation to 70° North latitude is acceptable East of 75° West longitude and West of 120° West longitude.
- Operation to 80° North latitude is acceptable East of 50° West longitude and West of 70° East longitude.
- Operation to 70° South latitude is acceptable except for the 45° between 120° East and 165° East longitude.

Approach

1. FMS instrument approaches must be accomplished in accordance with approved instrument approach procedures that are retrieved from the FMS navigation database. The FMS database must incorporate the current update cycle.

2. The FMS, with inputs from the GPS, may only be used for approach guidance if the reference coordinate data system for the instrument approach is WGS-84 or NAD-83.

3. Use of barometric VNAV Decision Altitude (DA) is not authorized with a remote altimeter setting. A current altimeter setting for the landing airport is required. Where remote altimeter minimums are shown, the VNAV function may be used only to the published MDA.

4. ILS, LOC, LOC-BC, LDA and SDF approaches using the FMS for approach guidance are prohibited.

5. When the approach at the destination is based on GPS guidance and the SBAS is not available or is disabled, an alternate airport required by operating rules must be served by an approach based on other than GNSS navigation. The airplane must have operational equipment capable of using that navigation aid, and the required navigation aid must be operational.

6. IFR non-precision approach approval is limited to published approaches within the U.S. National Airspace System. Approaches to airports in other airspace are not approved unless authorized by the appropriate governing authority.

7. Inserting waypoints on a published approach is prohibited.
8. Approaches copied from the SEC FLPN must be re-entered if previously flown.

Navigation Capabilities

The dual Flight Management System (FMS) is approved under Technical Standard Orders (TSO) TSO-C115b and TSO-C146c Class Delta 4.

When the FMS is receiving appropriate navigation signals, it meets the accuracy specifications for the following operations:

1. Oceanic and Remote:

   In accordance with AC 20-138A, the FMS and Global Positioning System (GPS) have been found to comply with the requirements for GPS primary means of navigation in oceanic and remote airspace.

   Two FMS units must be operating and receiving usable signals from two GPS sensors and used in conjunction with the Pre-Departure GPS Coverage Predictor Program, CPN 832-3443-008, Rev –, or later revision. For routes approved for single GPS navigation, a single FMS must be operating and receiving usable signals from the single GPS sensor and used in conjunction with the GPS Coverage Prediction Program listed above.

   NOTE: This does not constitute an operational approval.

2. North Atlantic (NAT) Minimum Navigational Performance Specifications (MNPS) Airspace:

   In accordance with the criteria of AC 120-33, AC 91-49 and AC 20-138A, the FMS and GPS have been found to comply with the requirements for MNPS airspace.

   Two FMS units must be operating and receiving usable signals from any two long-range sensors (IRS or GPS). Operations with GPS require use of the Rockwell Collins Pre-Departure GPS Coverage Predictor Program, CPN 832-3443-008, Rev –, or later revision.

   NOTE: This does not constitute an operational approval.

3. RNP-10 Airspace:

   The FMS with GPS has been demonstrated to meet the criteria of FAA Order 8400.12A "Required Navigation Performance-10 (RNP-10)" without time limitations.

   Two FMS systems must be operating and receiving usable signals from two operating Rockwell Collins GPS sensors and used in conjunction with the Rockwell Collins Pre-Departure GPS Coverage Predictor Program, CPN 832-3443-008, Rev -, or later version.

   NOTE: This does not constitute an operational approval.

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***Navigation Capabilities* (continued)**

4. P-RNAV (RNAV-1):

In accordance with the criteria of JAA TGL-10 and AC 90-96A, the FMS is capable of P-RNAV operations provided "FMS DR" is not displayed on the PFD or CDU and the FMS is receiving usable signals from at least one of the following:

- A single DME if auto-tune is selected.
- One GPS.

Determine the requirements of the national, area, or local air traffic control agency for determining the availability of GPS RAIM for the intended route of flight prior to departure.

Some terminal areas may require dual operating FMS and GPS equipment.

The operator/pilot must confirm that a Type 2 Letter of Authorization is valid for the navigation database. This is available from Rockwell Collins, Inc. by accessing the following website: www.rockwellcollins.com/fms.

Required P-RNAV Equipment:

Quantity	*Description*
1	FMC-6000 Flight Management Computer
1	CDU-6200 Control Display Unit
1	VIR-432 / NAV-4000 / NAV-4500 VHF Navigation Receiver
1	DME-442 / DME-4000 DME Transceiver
1	GPS-4000S Global Positioning System

NOTES:

1. *This does not constitute an operational approval.*
2. *P-RNAV (RNAV-1) and B-RNAV (RNAV-5) operations utilizing GPS as the only nav sensor require the following pre-flight planning:*
   - During the pre-flight planning phase, the flight crew must confirm, for the intended flight (route and time), the availability of RAIM with the latest information from the U.S. Coast Guard giving details of satellite non-availability (see http://www.navcen.uscg.gov).
     The U.S. NOTAM Office also provides satellite non-availability data.

   - The confirmation of the availability of RAIM should be obtained from the Rockwell Collins Pre-Departure GPS Coverage Predictor Program, CPN 832-3443-008, Rev -, or later version. Dispatch should not be made in the event of predicted continuous loss of RAIM of more than 5 minutes for any part of the intended flight. The use of the EUROCONTROL AUGUR tool may be used to satisfy this requirement (see http://augur.ecacnav.com/augur/app/home).

5. En route and Terminal, including B-RNAV (RNAV-5):

   In accordance with AC 90-45A, AC 20-130A, AC 20-138A, AC 90-96A, AMC 20-4, and AMC 20-5, the FMS is capable of en route and terminal operations, including B-RNAV, provided "FMS DR" is not displayed on the PFD or CDU and the FMS is receiving usable signals from at least one of the following:

   - A single DME if auto-tune is selected.
   - One GPS.

   NOTE: This does not constitute an operational approval.

6. Non-Precision Approach:

   RNAV (GPS) or GPS Overlay Non-Precision Approach – In accordance with AC 20-130A, AC 20-138A and AC 90-105, the FMS must be receiving usable signals from at least one GPS sensor, and the LPV APPR, L/V APPR, or GPS APPR annunciation must be displayed at the final approach fix.

   VOR/DME Approach (non-GPS overlay) – In accordance with TSO C115B and AC 20-130A, the FMS must be receiving the approach reference VOR/DME station, GNSS sensors disabled and the APPR annunciation must be displayed at the final approach fix.

   VOR, TCN, NDB (non-GPS overlay) – The FMS is not authorized to provide guidance for an approach that does not have a GPS overlay. In the terminal area, NO APPR will be annunciated in white on the PFD and APPR FOR REF ONLY in white on the CDU. Depending on database coding, the FMS may provide approach guidance (APPR) for some VOR approaches based on a VOR/DME or VORTAC.

   NOTE: Some approach transitions are not included in the database.

7. US RNAV/DP/STARS:

   The FMS is capable of operations on U.S. Area Navigation (Q) routes, RNAV 1 or RNAV 2 Departure Procedures and STARS in accordance with the criteria of FAA AC 90-100A, provided that:

   - The FMS is receiving usable signals from a single GPS.
   - The following messages are not displayed on any PFD or CDU:
     - FMS DR
     - VOR/DME ONLY or V/D ONLY
     - VOR/DME DIST > 40 NM

     and for procedures that require GPS or GPS is the only sensor available:
     - GNSS NOT AVAILABLE
     - GNSS-FMS DISAGREE
     - NO GNSS RAIM
     - LOSS OF INTEGRITY

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Navigation Capabilities (continued)

- The flight crew has entered NOTAM'd navaids on the CDU VOR/DME CONTROL page.
- The operator/pilot has confirmed that a Type 2 Letter of Authorization is valid for the navigation database. This is available from Rockwell Collins, Inc. by accessing the following website: www.rockwellcollins.com/fms.

NOTE: The following condition only applies when WAAS is NOTAM'd as not available or the airplane is outside the WAAS coverage area and the procedure requires GPS or GPS is the only available sensor.

- The confirmation of the availability of RAIM should be obtained from the Rockwell Collins Pre-Departure GPS Coverage Predictor Program, CPN 832-3443-008, Rev -, or later version. The FAA website www.raimprediction.net may also be used.

8. Barometric VNAV:

The FMS VNAV system is capable of BARO-VNAV operations down to LNAV/VNAV DA minimums in accordance with FAA AC 90-105.

The FMS must be receiving usable signals from at least one GPS sensor and the GPS APPR annunciation must be displayed at the final approach fix. A current altimeter setting for the landing airport is required. Where remote altimeter minimums are shown, the VNAV function may be used only to the published MDA.

In accordance with FAA AC 20-129, the VNAV system is approved for en route, terminal and approach operations.

9. Radius To Fix (RF) Leg Capability:

This FMS system installation is capable of Radius To Fix (RF) Leg transitions for Initial Intermediate and missed approach segments of instrument approaches, RNP Departure Procedures (DP) and RNP STARs utilizing a GPS sensor.

NOTE: This does not constitute approval to conduct RNP SAAAR or RNP AR instrument procedures.

Autopilot

The minimum autopilot use height for LPV or L/V approaches is 200 feet AGL.

VNAV

1. When using FMS VNAV, the barometric altimeters must be used as the primary altitude reference for all operations.

2. BARO-VNAV approach guidance to a DA is not authorized if the reported surface temperature exceeds the Baro-VNAV temperature limitations specified on the applicable approach procedure chart.

   NOTE: LPV and L/V approaches are not subject to temperature restrictions.

3. When conducting an instrument approach using BARO VNAV to LNAV/VNAV DA minimums, the flight director or autopilot must be used and VGP mode must be active.

   NOTE: This limitation does not apply to LPV or L/V operations.

4. Use of temperature compensated VNAV altitude constraints is prohibited unless authorized by Air Traffic Control or required by the appropriate governing authority.

SECTION 3 - EMERGENCY PROCEDURES

AVIONICS

FLIGHT DISPLAY FAILURE FLAGS

The following failure flags are available for display on the PFD:

FMS 1 **FMS 2**

Indicates that the selected FMS navigation data is invalid.

NAV Source................................ SELECT ANOTHER NAV SOURCE

V
N
A
V

Indicates invalid VNAV data.

Vertical NAV Source.................. SELECT ANOTHER VERTICAL MODE

If the message is accompanied by a yellow USE LNAV MINIMUMS message on the CDU, select BARO via the ARR DATA page and utilize barometric VNAV for descent guidance to the DA or MDA. The selection of BARO must be executed prior to the FAF.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

SUB-SECTION 4.05 - ABNORMAL PROCEDURES

AVIONICS

AVIONICS SYSTEMS

FMS Caution Messages

The following messages are annunciated in yellow on either the CDU or PFD.
Some CDU messages are repeated at the bottom of the MFD display.

Caution Messages	Description & Action
APPR NOT AVAILABLE **CDU - MFD**	This message is displayed in the terminal area (31 NM from the origin or destination) when the FMS determines the system does not meet the navigational requirements for approach operations. Select an approach not based on GNSS or proceed to the alternate airport if an approach cannot be completed in visual conditions.
CHK SBAS SVC PRVDR **CDU**	This message is displayed when SBAS is not available or is not enabled. Verify the SBAS provider is enabled.
CRS TO FAF > 45 DEG **CDU**	This message is displayed after executing a "direct-to" the FAF with an INTC CRS greater than 45° from the final approach course. The FMS will not transition to the approach mode and SEQ INHB will be displayed on the PFD in yellow. If the approach is flown with this message displayed, the FMS will not provide guidance beyond the FAF to track the final approach course. Perform a "direct-to" the FAF with an INTC CRS within 45° of the final approach course.
HALF BANK SELECTED **CDU**	This message is displayed when the autopilot/flight director 1/2 BANK and NAV modes are active, an approach is in the flight plan and the airplane is within 31 NM of the approach airport. The message is also displayed within 1 minute of entering a holding pattern. Deselect 1/2 BANK mode prior to commencing the approach or entering a holding pattern.

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FMS Caution Messages (continued)

Caution Messages	Description & Action
GNSS NOT AVAILABLE **CDU**	This message is displayed when the FMS cannot use any of the enabled GNSS sensors or the flight crew has disabled all GNSS sensors via the GNSS CTL page. Continue FMS navigation with remaining valid sensors appropriate for the route of flight.
LOI **PFD** and **LOSS OF INTEGRITY** **CDU - MFD**	This message is displayed when the FMS detects that the GNSS position does not meet the requirements for navigational use in the current phase of flight. Select a navigation source other than FMS. OR Deselect the GNSS receivers and continue FMS navigation with remaining valid sensors in accordance with airspace requirements.
NO APPR **PFD**	This message is displayed when the FMS is in approach mode and the FMS determines the system does not meet the navigational requirements for approach operations. Execute a go-around if the approach cannot be completed in visual conditions.
USE LNAV MINIMUM **CDU - MFD**	This message is displayed when the GNSS vertical signal is inadequate for operating to the LPV or SBAS L/V minimums. This message will be accompanied with the "LPV NOT AVAILABLE" or "L/V NOT AVAILABLE" message. Select BARO via the ARR DATA page and fly the approach utilizing BARO VNAV to LNAV/VNAV minimums or LNAV minimums. The selection of BARO must be executed prior to the FAF.

SUB-SECTION 4.10 - NORMAL PROCEDURES

FMS-6000 Version 4.0 APPROACH PROCEDURES

For normal procedures, refer to the Operator's Guide, Rockwell Collins FMS-6000 V4.0 Flight Management System, appropriate for the system and software installed in the Hawker 800XP, Publication Number 523-0809284, 1st Edition, dated April 20, 2009, or latest revision.

FMS Approach Procedure with BARO-VNAV

NOTE: Use of the autopilot/flight director 1/2 BANK or TURB modes may result in excessive deviation from the course during an approach or holding pattern due to the limits these modes place on autopilot command authority.

1. On the CDU, push the DEP ARR function key to show the ARRIVAL page.

   NOTE: Either an origin (ORIG) or a destination (DEST) airport must be specified in the flight plan for approach selections to be available on the ARRIVAL page. When the DEP ARR key is pushed, one of the following three pages is shown:

   - *DEPART*
   - *ARRIVAL*
   - *DEP/ARR INDEX*

   If the airplane is on the ground, or airborne less than 50 NM from the origin airport, or less than halfway to the destination airport, the DEPART page for the ORIGIN airport shows. If the airplane is airborne and more than halfway to the destination airport, the ARRIVAL page for the destination airport is shown.

2. Push the line select button adjacent to the desired approach.
3. Push the line select key button adjacent to the desired transition.

   NOTE: If the desired approach or transition is not visible under the APPROACHES or TRANS list, push the NEXT or PREV function keys to scroll through additional selections.

4. Via the ARR DATA page, select BARO if the approach is a LPV or L/V as set by the database.
5. Once the approach, approach transition and BARO (if required) have been selected, push the EXEC function key to add the approach to the flight plan.

   NOTE: When an approach is added to a flight plan from the ARRIVAL page, a discontinuity may be added immediately before the approach procedure in the flight plan.

6. To intercept the final approach course via vectors, select the flight director NAV or APPR mode. When flying an approach via a transition other than vectors and APPR is the desired vertical mode to complete the approach, verify APPR mode is selected prior to 2 NM from the final approach fix.

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FMS Approach Procedure with BARO-VNAV (continued)

NOTE: VNAV altitude temperature compensation (TEMP COMP) is available for use during approach operations. When this mode is active, the FMS will automatically account for non-standard temperatures by calculating temperature compensated altitudes for approach transition, final approach and missed approach legs. These altitudes must be reviewed and manually adjusted as required to comply with all ATC clearances and procedure requirements. Flying temperature compensated altitudes without approval of Air Traffic Control or the appropriated governing authority can lead to a loss of traffic separation.

7. If VNAV path guidance is desired for a non-precision approach, select VNAV mode prior to the final approach fix. The FMS will provide a vertical path for those approaches with a vertical angle displayed on the CDU LEGS page to the altitude at the runway or missed approach point.

   Approaches without a vertical angle will display V-MDA above the missed approach point altitude on the CDU LEGS page.

   If APPR mode is selected on the FCP, a white GP annunciation will be displayed no later than 2 NM from the final approach fix. This indicates the system is armed to capture and track a VNAV glide path past the final approach fix.

   After glide path capture, the annunciation will change to VGP in green. In VGP mode, the VNAV system will not level at the preselected altitude. The preselector can be set to the missed approach altitude. Operation in VGP mode is similar to GS mode for an ILS approach and is appropriate when operating to a DA.

   If NAV mode is selected on the FCP, a white PATH annunciation will be displayed no later than 2 NM from the final approach fix. This indicates the system is armed to capture and track a VNAV path past the final approach fix. After path capture, the annunciation will change to VPATH in green.

   In VPATH mode, the VNAV system will level at the preselected altitude or VNAV reference altitude, whichever is higher. There may be subsequent step-down fixes after the FAF that require pilot action to continue the descent to the MDA. VNAV path guidance after the FAF is not available for those approaches with V-MDA displayed above the missed approach point altitude on the CDU.

   If flying level to the FAF, the airplane will remain in an altitude hold mode past the FAF unless another flight director vertical mode is selected for descent to the desired MDA.

   If descending to the FAF via a VNAV-defined path, the flight director will revert to PTCH mode at the FAF and the airplane will continue the descent at the airplane pitch value present at the transition to PTCH mode.

   There may be subsequent step-down fixes after the FAF that require pilot action to continue the descent to the MDA.

FMS LPV or L/V Approach Procedure

NOTE: Use of the autopilot/flight director 1/2 BANK or TURB modes may result in excessive deviation from the course during an approach or holding pattern due to the limits these modes place on autopilot command authority.

1. On the CDU, push the DEP ARR function key to show the ARRIVAL page.

   NOTE: Either an origin (ORIG) or a destination (DEST) airport must be specified in the flight plan for approach selections to be available on the ARRIVAL page. When the DEP ARR key is pushed, one of three pages is shown:

   - *DEPART*
   - *ARRIVAL*
   - *DEP/ARR INDEX*

   If the airplane is on the ground, or airborne less than 50 NM from the origin airport, or less than halfway to the destination airport, the DEPART page for the ORIGIN airport shows. If the airplane is airborne and more than halfway to the destination airport, the ARRIVAL page for the destination airport is shown.

2. Select an RNAV (GNSS) approach that is authorized for SBAS-VNAV.

3. Push the line select button adjacent to the desired transition.

   NOTE: If the desired approach or transition is not visible under the APPROACHES or TRANS list, push the NEXT or PREV function keys to scroll through additional selections.

4. Once the approach and transition have been selected, push the EXEC function key to add the approach to the flight plan. The FMS annunciates "LPV TERM" or "L/V TERM" on the PFD when the airplane is within the terminal area (31 NM) of the selected facility.

   NOTE: When an approach is added to a flight plan from the ARRIVAL page, a discontinuity may be added immediately before the approach procedure in the flight plan.

5. To intercept the final approach course via vectors, select the flight director APPR mode. When flying an approach via a transition other than vectors, verify APPR mode is selected prior to 2 NM from the final approach fix.

   NOTE: Approaches conducted utilizing SBAS-VNAV are not subject to temperature limitations.

Continued Next Page ⟶

FMS LPV or L/V Approach Procedure (continued)

6. Select VNAV mode prior to the FAF. RWY is annunciated on the PFD when within 500 ft (approximately 2 dots) of the LPV vertical path.

   If APPR mode is selected on the FGP, a white GP annunciation will be displayed no later than 2 NM from the final approach fix. This indicates the system is armed to capture and track a glide path past the final approach fix. After glide path capture, the annunciation will change to VGP in green.

   In VGP mode, the VNAV system will not level at the preselected altitude. The preselector can be set to the missed approach altitude. Operation in VGP mode is similar to GS mode for an ILS approach and is appropriate for operations to a DA.

7. When the flight plan leg after the FACF becomes active and the airplane meets the lateral capture criteria, the PFD annunciates LPV APPR or L/V APPR, and displays angular lateral and vertical deviation for the SBAS-VNAV approach. RWY will be annunciated on the PFD in the VNAV target altitude field after LPV or L/V APPR is annunciated and the airplane is within 500 ft of the SBAS vertical path.

   NOTE: The TOD displayed past the FACF is based on a barometric VNAV path to the final approach fix altitude until the FMS transitions to LPV APPR or L/V APPR mode. After transition to either FMS approach mode, the TOD represents the intercept point of the SBAS vertical path.

The FMS transitions to LPV APPR or L/V APPR mode under any of the following conditions:

- The FACF is sequenced and flying on the published procedure.
- Intercepting inside the FACF via HDG mode and within 0.2 NM of the lateral path.
- If a "direct-to" the FAF was selected with an INTC course within 45° of the final approach course, LPV APPR or L/V APPR will be annunciated 2 NM prior to the FAF.
- If a vertical "direct-to" to FAF was selected, LPV APPR or L/V APPR will be annunciated 2 NM prior to FAF.
- If the FACF is deleted, LPV APPR or L/V APPR will be annunciated after sequencing the next step-down fix or, in absence of any step-down fixes, 2 NM prior to the FAF. If the last step-down altitude is less than 2 NM from the FAF, either FMS approach mode activates 2 NM prior to the FAF.
- If step-down altitudes between the FACF and FAF have been modified with an AT constraint altitude, LPV APPR or L/V APPR will activate after the last modified step-down altitude. If the last step-down altitude is less than 2 NM from the FAF, either FMS approach mode activates 2 NM prior to the FAF.
- When flying parallel to the final approach course in heading mode, LPV APPR or L/V APPR will activate crossing the 2 NM radius circle around the FAF.

Missed Approach Procedures

Missed approach procedures are automatically added to the flight plan with the selection of an approach.

The missed approach procedure begins on the LEGS page with the leg immediately following the MISSED APPR label. It will also display on the ACT/MOD FPLN page as MISSED APPROACH.

A missed approach is activated by pushing the GA button.

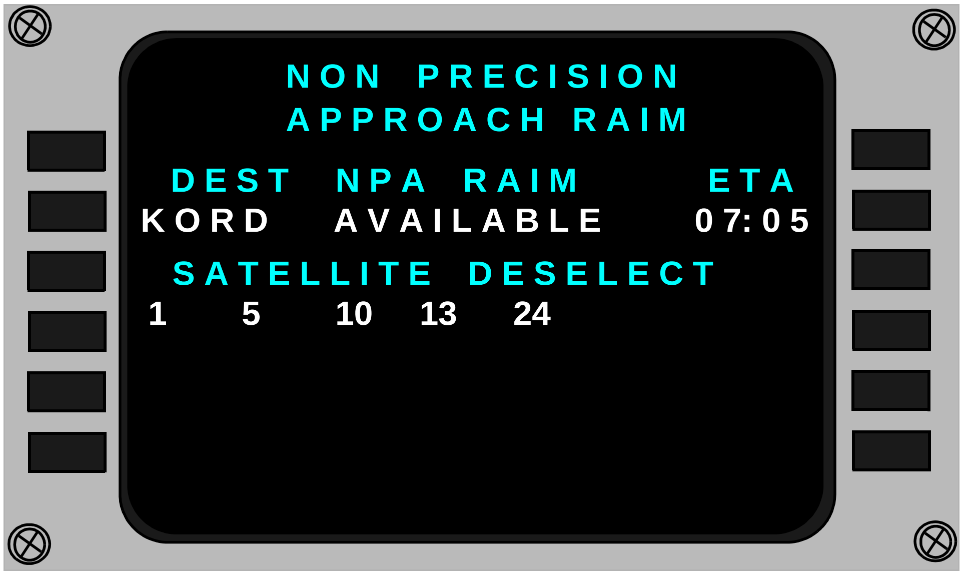
If a missed approach is required from a localizer-based approach:

1. Push the GA button to initiate the go-around and missed approach procedure.
2. Set power, configure and climb on course as required.
3. On the LEGS page, verify AUTO sequence is selected.
4. Select FMS as the active NAV source.
5. Set the appropriate lateral and vertical flight director modes.
6. Engage the autopilot (if desired).

If a missed approach is required from an FMS-based approach:

1. Push the GA button to initiate the go-around and missed approach procedure.
2. Set power, configure and climb on course as required.
3. On the LEGS page, verify AUTO sequence is selected.
4. Set the appropriate lateral and vertical flight director modes.
5. Engage the autopilot (if desired).

Non-Precision Approach RAIM Page



```
     NON  PRECISION
     APPROACH RAIM

  DEST   NPA  RAIM       ETA
KORD    AVAILABLE      07:05

  SATELLITE  DESELECT
1     5     10    13    24
```

This function is only required when conducting a GPS-based approach outside of WAAS coverage or when WAAS is NOTAM'd as unavailable. Verification of Non Precision Approach RAIM availability is not required when conducting SBAS-based approaches.

FMS NAV-to-NAV Operation

The white "NO APPR" message is displayed on the PFD within 31 NM of the destination airport and a localizer-based approach is in the flight plan when a condition exists that will inhibit the automatic transition from FMS to LOC navigation source. These conditions include:

- The NO APPR indication is displayed on the PFD when APPR is selected more than 31 NM from the airport. When within the 31 NM radius of the airport, selecting NAV and then APPR will clear the NO APPR indication.
- The NO APPR indication is displayed on the PFD when the localizer is not tuned to the proper frequency.

The flight crew must select APPR (on the Flight Guidance Panel) after the FMS completes the NAV-to-NAV set-up for the automatic transition from FMS to LOC navigation to occur.

When the airplane is in the terminal area, the flight crew can confirm that the FMS has completed the NAV-to-NAV set-up for the selected approach by observing the following on the PFD displays:

- Localizer is tuned to the ILS frequency corresponding to the selected approach.
- Localizer course is set.
- LOC is the preselected navigation source.

SECTION 5 - PERFORMANCE

No Change.

SECTION 6 - WEIGHT & BALANCE

No Change.

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Hawker 800XP

INSTRUCTION SHEET

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0123
for
AIRPLANES EQUIPPED WITH Kit 149-3435 COCKPIT VOICE RECORDER CVR-120R

Original Issue: January 25, 2011

This Supplement is Applicable to the Following Airplane Flight Manual:
P/N 140-590032-0005

INSTRUCTIONS

1. Turn to SECTION - 7 SUPPLEMENTS and compare the date of the existing LOG OF SUPPLEMENTS page with the date of the enclosed LOG OF SUPPLEMENTS page.

   Retain the LOG OF SUPPLEMENTS page that has the later date and discard the older LOG OF SUPPLEMENTS page. If required, the latest LOG OF SUPPLEMENTS can be printed by using the HBC website at: http://www.hawkerbeechcraft.com/service_support/pubs/docs/nontechnical/140-590032-0005-los.pdf

2. Arrange the Supplements in SECTION - 7 SUPPLEMENTS, including this Supplement P/N 140-590032-0123 Pages 1 of 8 thru 8 of 8, in the order indicated on the LOG OF SUPPLEMENTS page.

3. After compliance with these instructions, this Instruction Sheet may be discarded.

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Hawker Beechcraft

Hawker 800XP

FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0123
for
AIRPLANES EQUIPPED WITH Kit 149-3435
COCKPIT VOICE RECORDER CVR-120R

THIS SUPPLEMENT IS APPLICABLE TO
FAA APPROVED AIRPLANE FLIGHT MANUAL
P/N 140-590032-0005

Airplane Serial Number: ....

Airplane Registration Number: ....

Approved By: M Baker
for Margaret Kline, Manager
Aircraft Certification Office
Federal Aviation Administration
Wichita, Kansas
USA

Approval Date: 1/25/2011

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
P/N 140-590032-0123
for
AIRPLANES EQUIPPED WITH Kit 149-3435
COCKPIT VOICE RECORDER CVR-120R

Supplement Status	Date
Original Issue	Jan 25, 2011

LIST OF EFFECTIVE PAGES

Use the List Of Effective Pages to determine the current status of this supplement.

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FAA APPROVED
AIRPLANE FLIGHT MANUAL SUPPLEMENT
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INTRODUCTION

This supplement is applicable only to Hawker 800XP airplanes that have Kit 149-3435 Cockpit Voice Recorder CVR-120R installed.

The limitations, procedures and information contained in other sections of this Airplane Flight Manual are applicable, except where superseded by the information given in this supplement.

SECTION 1 - GENERAL

No Change.

SECTION 2 - LIMITATIONS

No Change.

SECTION 3 - EMERGENCY PROCEDURES

No Change.

SECTION 4 - ABNORMAL/NORMAL PROCEDURES

Sub-section 4.05 - ABNORMAL PROCEDURES

AVIONICS

AVIONICS SYSTEMS

CVR Failure (CVR PASS FAIL LED - yellow or red)

In Flight: Correct before next flight.

On Ground: Correct prior to flight.

NOTE: If on ground, retest after 3 to 4 minutes. This may correct the indication.

Sub-section 4.10 - NORMAL PROCEDURES

No Change.

SECTION 5 - PERFORMANCE

No Change.

SECTION 6 - WEIGHT & BALANCE

No Change.

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Garrett Aviation Services
1200 Airport Drive
Capital Airport
Springfield, IL 62707
Document #43-8027-003, Rev. (B)

AFM Supplement To
Raytheon Aircraft Company
Hawker 800XP
Hawker 850XP

FAA APPROVED AIRPLANE FLIGHT MANUAL SUPPLEMENT

RAYTHEON AIRCRAFT COMPANY

Hawker 800XP, Hawker 850XP

Reg. No. ________

S/N ________

This supplement must be attached to the FAA Approved Flight Manual when Honeywell Digital Electronic Engine Controls (DEEC) are installed in accordance with STC number **ST01424CH-D**. The information in this document supersedes the basic airplane flight manual only where covered in the items contained herein. For Limitations, Procedures and Performance not contained in this supplement, consult the basic airplane flight manual.

FAA Approved ______________________
Robert A. Miller
DAS Administrator
Garrett Aviation Services LLC, dba,
Landmark Aviation
Springfield, IL
DAS-100079-CE

FAA APPROVED AIRPLANE FLIGHT MANUAL SUPPLEMENT

LOG OF REVISIONS

REV.	EFFECTED PAGE (s)	DESCRIPTION	DATE	APPROVED BY
IR	All	Initial Release	06/20/01	MTR
A	All	Reissued, Added descriptive content including FAST & SLOW flashing annunciators and renaming Section 6.	08/08/02	**MTR**
B	All	Add Hawker 850XP, change DAS administrator	05/11/06	**RAM**

NOTE: All changes are indicated by a black vertical line along left margin.

FAA APPROVED AIRPLANE FLIGHT MANUAL SUPPLEMENT

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FAA APPROVED AIRPLANE FLIGHT MANUAL SUPPLEMENT

BASIC AIRPLANE FLIGHT MANUAL

1 - GENERAL

This document provides special instructions applicable to the operation of the TFE731-5BR-1H engines on the Raytheon Aircraft Company, Hawker 800XP and Hawker 850XP aircraft equipped with the Honeywell N_1 Digital Electronic Engine Controls (DEEC).

2 - LIMITATIONS

A) Flight must not be initiated with a Steady **ENG 1 CMPTER** or **ENG 2 CMPTER** annunciator.

B) Flight must not be initiated with Fast flashing **ENG 1 CMPTER** or **ENG 2 CMPTER** annunciators (approximately one flash every one second) with aircraft on the ground and engines not running.

3 - EMERGENCY PROCEDURES

Unchanged

4 - ABNORMAL/NORMAL PROCEDURES

4.05 ABNORMAL PROCEDURES

ENGINE COMPUTER FAILURE ENG 1 CMPTER **AND/OR** ENG 2 CMPTER

On-Ground, Engines Not Running

A) Steady **ENG 1 CMPTER** or **ENG 2 CMPTER** annunciator indicates Manual Mode Operation due to a fault within the engine control system. Corrective action is required prior to next flight.

B) Fast flashing **ENG 1 CMPTER** or **ENG 2 CMPTER** annunciators (one flash every one second) with aircraft on the ground and engines not running indicates a fault within the engine control system which requires corrective action prior to next flight.

C) Slow flashing **ENG 1 CMPTER** or **ENG 2 CMPTER** annunciators (one flash every two seconds) with aircraft on the ground and engines not running may occur occasionally and is a normal condition. This indicates the DEEC memory is nearing capacity or an event record exists. The DEEC memory should be downloaded at the next opportunity. If subsequent flights are performed prior to downloading the DEEC memory, engine data may be overwritten and lost.

Engines Running

ENG 1 CMPTER or **ENG 2 CMPTER** annunciators will only illuminate steady with engines running. Refer to basic AFM for operational instructions.

CAUTION: Cycling the ENG CMPTER circuit breaker or moving the ENG CMPTER switch from OVSPD PROT to AUTO or from OFF to AUTO when the engine is set to high power may cause a momentary N1 roll back of up to 10%.

Note: Cycling the ENG CMPTER circuit breaker or the ENG CMPTER switch from AUTO to OFF to AUTO (or AUTO to OVSPD PROT to AUTO) may reset the ENG CMPTER failure and return control to Auto mode. Reduce thrust lever to mid-range position prior to attempting to reset the ENG CMPTER.

4.10 NORMAL PROCEDURES

Unchanged

5 - PERFORMANCE

Unchanged

6 - APPENDICES/SUPPLEMENTS/WEIGHT AND BALANCE

Appendices and supplements remain unchanged. For weight and balance changes, refer to STC.

LOG OF APPENDIX TOPICS

APPENDIX of NON-FAA APPROVED DATA
for
FAA Approved Airplane Flight Manual
P/N 140-590032-0005

AIRPLANES EQUIPPED WITH COLLINS PRO LINE 21 AVIONICS
Serials 258541, 258556, 258567 and After

June 15, 2004

All topics of information contained in this Appendix are not FAA approved and do not replace or supersede data found in the FAA approved sections of this manual. This data has been prepared and approved by Raytheon Aircraft Company.

Topics incorporated into this Appendix, which have been issued by an organization other than Raytheon Aircraft Company, must be recorded on a separate log.

Some Topics may not apply, depending on the applicable Aviation Authority and the equipment installed on the airplane.

Topic Number	*Title*	*Rev No.*	*Date*
1	Non-FAA Approved Performance Data Based on JAR Analysis for Operation on Wet and Contaminated Runways with Flaps 15° and 0°.	1	June 15 2004

If an appendix topic is required for your airplane, contact Raytheon Technical Manual Distribution Center at 1-800-796-2665 or through the Web site at www.racpubs.com.

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Appendix - Topic 1
Operation On Wet and Contaminated Runways
Flaps 15° and 0°

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Appendix - Topic 1

Operation On Wet and Contaminated Runways

Flaps 15° and 0°

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Appendix - Topic 1

Operation On Wet and Contaminated Runways Flaps 15° and 0°

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0	All	Original Issue	Aug 2002
1	1	Revised Table of Contents	Jun 2004
1	3 & 4	Revised LOEP	
1	4A	Added LOG OF REVISIONS	
1	4B	Added blank page for pagination	
1	28A	Added blank page for pagination	
1	28B	Added INTRODUCTION - WAT DATA text	
1	28C	Added Figure 2A - Maximum Take-off Weight for Altitude and Temperature for Use with Wet Runways	
1	28D	Added blank page for pagination	

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NON-FAA APPROVED PERFORMANCE DATA
BASED ON JAR ANALYSIS
for
OPERATION ON
WET and CONTAMINATED RUNWAYS
FLAPS 15° and 0°

INTRODUCTION

This performance data has been prepared and approved by Raytheon Aircraft Company to assist operators in developing suitable guidance, recommendations or instructions for use by their flight crews when operating under adverse runway conditions. All performance is derived analytically or based on analytically corrected flight test data of dry hard runway surfaces as specified in Joint Aviation Regulations. This performance data is not FAA approved.

The applicable regulations in some countries may require certain elements of supplementary performance information to be established as additional limitations for the operation of the airplane.

Ground handling characteristics have been demonstrated only on dry, paved runways. Pilots must use extreme care when operating on runways with reduced friction, particularly in crosswinds, when using reverse thrust, or following an engine failure. Adequate control under these conditions has not been demonstrated.

Allowance is made for displacement drag of the wheels in the contaminants and for impingement drag caused by spray striking the airframe and landing gear.

For the contaminates listed in the table below, under most conditions, the airplane will be unable to complete a take-off if an engine fails below V_R since it cannot accelerate on one engine when heavy contaminant drag is present. In addition, controllability of the airplane above hydroplaning speeds with one engine inoperative has not been demonstrated. It is therefore assumed that on contaminated runways, other than "Wet" and "Compacted Snow", a decision speed to continue the take-off would not be taken before V_R i.e. V_1=V_R. For runways classified as "Wet" or contaminated by "Compacted Snow", single engine acceleration characteristics are not affected, therefore more traditional splits between V_1 and V_R are provided.

The following relative density of contaminants has been assumed.

Contaminant	Specific Gravity
Dry Snow	0.2 to 0.35
Wet Snow	0.35 to 0.50
Slush	0.50 to 0.80
Standing Water	1.00

JAR DEFINITIONS

Dry Runway

In addition to those runways which are not "wet" or "contaminated" according to the definitions stated below, this category includes those runways which have been specially prepared with grooves or porous pavement and maintained to retain "effectively dry" braking action, even when moisture is present.

Wet Runway

A runway is considered to be wet when it is well soaked but without significant areas of standing water. A runway is considered well soaked when there is sufficient moisture on the runway surface to cause it to appear reflective.

Runway Contaminated By Compacted Snow

A runway is considered contaminated by compacted snow when covered by snow which has been compressed into a solid mass which resists further compression and will hold together or break into lumps if picked up.

Runway Contaminated by Standing Water, Slush or Loose Snow

A runway is considered to be contaminated when more than 25% of the runway surface area (whether in isolated areas or not) within the required length and width being used, is covered by surface water more than 3mm (0.125 inch) deep, or by slush or loose snow equivalent to more than 3 mm (0.125 inch) of water.

LIMITATIONS

Weight Limitations

The maximum operating weights are determined from the following performance graphs and tables. The maximum take-off weight at a particular airfield may be further restricted by some other performance criteria, such as WAT limit, brake energy limits, the net take-off flight path or enroute terrain clearance requirements. The actual take-off weight may therefore have to be less than that permitted solely by consideration of the take-off field length.

WARNING: When operating from wet or contaminated runways, take-off and landing weights cannot exceed the weights for dry runway for the same conditions.

PERFORMANCE

The level of safety is decreased when operating on contaminated runways, therefore every effort must be made to make sure the runway surface is cleared of any significant precipitation. The performance information assumes any surface contaminant to be of uniform depth and density.

Ground handling characteristics on contaminated surfaces will not be as good as can be achieved on dry or wet runways, in particular, in cross-winds and when using reverse thrust.

TAKE-OFF FIELD LENGTH

The performance is based on the following JAR assumptions:

Engines	Both engines are at take-off thrust with APR armed. Failure of the critical engine occurs at V_1.
Engine Bleed Air	Air conditioning bleed off; see *NOTE 1* for the effect of engine antice bleed.
Flaps	15°
Landing Gear	UP selected after lift-off.
Runway	As tabulated.

NOTES:

1. *To take account of engine antice on the take-off field length, add 10° C to the actual air temperature before entering the tables.*
2. *The wind grid is factored in such a way that the effect of not more than 50% of headwinds and not less than 150% of tailwinds is obtained. Reported winds may therefore be used directly in the grids; however, when a landing is to be made into a headwind greater than 40 knots, the chart is to be read at 40 knots.*

The following JAR techniques have been assumed:

Normal Take-Off	Both engines are run up to normal take-off thrust with APR armed, and then the brakes are released. Rotation is initiated at V_R.
Engine Failure Rejected Take-Off	Failure of one engine is recognized at V_1. Both thrust levers are closed, maximum wheel braking using anti-skid is applied, airbrakes are opened and the airplane brought to a stop. *NOTE:* *No reduction in stopping distance is credited for the use of reverse thrust.*
Rejected Take-Off	Decision to abort the take-off is made at V_1. Both thrust levers are closed, maximum wheel braking using anti-skid is applied, airbrakes are opened and the airplane brought to a stop. *NOTE:* *No reduction in stopping distance is credited for the use of reverse thrust.*
Engine Failure Continued Take-Off	Following the failure of one engine at V_1, the maximum thrust is automatically set on the operating engine. Rotation is initiated at V_R; climb away is made to achieve V_2 appropriate to the flap setting at 35 feet. Landing gear is selected UP 3 seconds after lift-off.

INSTRUCTION FOR USE OF TABULATED DATA and GRAPHS

Determine the appropriate tables for the airplane T.O. WEIGHT (lb/kg) and Field Pressure Altitude (ft).

- For T.O. WEIGHT and Field Pressure Altitude values which are between the tabulated values, use either linear interpolation or the next higher tabulated value.
- With engine antice ON, add 10° C to the actual air temperature before entering the table.
- For temperatures between the tabulated values, use either linear interpolation or the nearest temperature above or below the required temperature, whichever gives the longer distance.
- Determine the runway distance required and the take-off speeds V_1, V_R and V_2 for level runway and a reported wind component of zero using the tables for the appropriate flap setting.
- Shaded regions of the take-off speeds and field length tables represent conditions that exceed either the maximum allowable take-off temperature (ISA + 35° C) or the WAT limit. These conditions are included for use in interpolation to intermediate conditions which may not be limited.

NOTE: The broken arrow lines illustrate the use of the graphs.

- Take-Off Decision Speed (V_1) Corrections:

  For Take-Off Decision Speed (V_1) Correction - Wet Runway Surface - Flaps 15°, enter Figure 1.

  For Take-Off Decision Speed (V_1) Correction - Wet Runway Surface - Flaps 0°, enter Figure 4.

  For Take-Off Decision Speed (V_1) Correction - Compacted Snow Runway Surface - Flaps 15°, enter Figure 6.

  To use the Take-Off Decision Speed (V_1) Correction graphs (Figures 1, 4 and 6) enter the appropriate graph on the left at the uncorrected take-off decision speed (V_1) and move across to the reference line. Follow the correction lines to the runway slope % (uphill, as shown by the example line, downhill, come back to the relevant %) then move across to obtain the corrected take-off decision speed.

- Take-Off Field Length Corrections (Wet and Compacted Snow):

  For Take-Off Field Length Correction - Wet Runway Surface - Flaps 15°, enter Figure 2.

  For Take-Off Field Length Correction - Wet Runway Surface - Flaps 0°, enter Figure 5.

  For Take-Off Field Length Correction - Compacted Snow Runway Surface - Flaps 15°, enter Figure 7.

  To use the Take-Off Field Length Correction graphs (Figures 2, 5 and 7) enter the appropriate graph on the left at the uncorrected take-off field length and move across to the reference line. Follow the correction lines to the runway slope % (uphill, as shown by the example line, downhill, come back to the relevant %) then move across to the reported wind component reference line. Follow the correction lines to the reported wind component (tailwind (-) or headwind) then move across and read the corrected take-off field length.

- Maximum Take-Off Weight Limited by Maximum Brake Energy:

  For Wet Runways with Flaps 0°, enter Figure 3 to obtain the Maximum Take-Off Weight Limited by Maximum Brake Energy. This weight should be compared with the WAT-Limited Maximum Weight and the more restrictive limit used. Brake Energy is never limiting with Flaps 15°.

- Take-Off Field Length Corrections (Standing Water, Slush, Wet and Dry Snow):

  Enter Figures 8 through 11 (Standing Water, Slush, Wet and Dry Snow) with the uncorrected runway distance required and proceed to correct for the known reported specific gravity (if required), depth, runway slope and wind component.

  If specific gravity is not reported then the value which gives the longest field length should be assumed.

- Landing Distance:

  Enter Figures 12 through 16 (Standing Water, Slush, Wet and Dry Snow) with the uncorrected runway distance required and proceed vertically to correct for the known reported specific gravity (if required), depth, runway slope and wind component.

  If specific gravity is not reported then the value which gives the longest field length should be assumed.

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Table 1

Flaps 15° **Field Pressure Altitude (Sea Level)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	113	115	117	119		
	V_R ~ KIAS	132	132	132	132	132	132	132	132	132	132	132	133	133	133	133	133		
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	140	140	139	138	138		
	TOFL ~ FT	4951	5038	5127	5218	5310	5403	5496	5590	5686	5783	5876	6026	6206	6677	7213	7826		
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	112	111	113	115		
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130		
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	137	136	136	135		
	TOFL ~ FT	4930	5017	5106	5196	5288	5381	5474	5567	5662	5758	5851	5997	6047	6188	6689	7261		
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	112	109	109	111	113	
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	126	127	127	127	127	127	
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	135	135	135	134	133	133	132	
	TOFL ~ FT	4913	5000	5089	5179	5270	5363	5455	5548	5642	5738	5830	5972	6015	5913	6175	6708	7291	
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	108	106	107	109	
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	123	123	124	124	124	124	124	
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	132	132	131	130	129	
	TOFL ~ FT	4880	4967	5055	5144	5235	5326	5418	5510	5603	5698	5790	5927	5963	5856	5754	6144	6686	
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	108	105	103	105	107
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120	120	120	121	121	121	121	121
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	130	130	129	128	128	127	126
	TOFL ~ FT	4841	4928	5016	5104	5194	5285	5376	5467	5559	5653	5744	5877	5905	5794	5686	5627	6122	6640
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	108	105	102	101	103
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	116	116	117	117	117	118	118	118
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	128	127	126	126	125	124	123
	TOFL ~ FT	4802	4888	4975	5063	5152	5242	5331	5422	5512	5605	5695	5823	5845	5729	5617	5516	5561	6036
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	108	105	102	99	100
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	114	114	115	115	115	115
	V_2 ~ KIAS	127	127	127	127	127	127	127	126	126	126	126	126	125	124	124	123	122	121
	TOFL ~ FT	4762	4848	4934	5021	5110	5198	5287	5376	5466	5557	5646	5771	5785	5665	5547	5441	5339	5557
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	112	113	111	111	112	112	113	113
	V_2 ~ KIAS	127	127	127	127	127	127	126	126	126	126	126	126	124	122	121	121	120	119
	TOFL ~ FT	4725	4810	4896	4982	5069	5157	5245	5333	5422	5512	5600	5720	5728	5603	5480	5368	5260	5117
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	109	109	110	110
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	126	124	120	119	119	118	117
	TOFL ~ FT	4688	4773	4858	4944	5030	5117	5204	5291	5379	5467	5555	5670	5671	5541	5413	5296	5182	5035
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	106	107	107
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	126	124	121	117	116	115	115
	TOFL ~ FT	4656	4740	4825	4910	4996	5082	5168	5254	5340	5427	5514	5625	5618	5484	5351	5228	5108	4957
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	103	104	104
	V_2 ~ KIAS	128	128	128	128	127	127	127	127	127	127	127	127	124	121	117	114	113	112
	TOFL ~ FT	4629	4712	4796	4881	4966	5051	5136	5222	5307	5393	5479	5585	5571	5432	5294	5165	5039	4883
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	110	107	105	102	99	96
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	110	108	105	102	100	101
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	127	127	127	125	121	117	114	111	110
	TOFL ~ FT	4607	4690	4774	4858	4942	5027	5111	5196	5280	5365	5450	5551	5530	5386	5242	5107	4975	4815

WET RUNWAY CONDITION

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Table 2

Flaps 15° **Field Pressure Altitude (1000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	114	116	118			
	V_R ~ KIAS	132	132	132	132	132	132	132	132	132	132	132	133	133	133	133			
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	140	139	138	138			
	TOFL ~ FT	5123	5214	5306	5400	5496	5593	5690	5786	5886	5986	6119	6220	6677	7198	7756			
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	110	112	114			
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130			
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	137	137	136	135			
	TOFL ~ FT	5101	5191	5283	5377	5473	5569	5665	5762	5861	5960	6090	6163	6190	6673	7205			
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	108	110	112		
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	127	127	127	127	127		
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	135	135	135	135	134	134	133	132		
	TOFL ~ FT	5083	5173	5265	5358	5454	5549	5645	5741	5840	5938	6066	6132	6077	6162	6655	7217		
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	107	106	108	110	
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	123	123	124	124	124	124	124	
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	132	131	130	130	129	
	TOFL ~ FT	5047	5137	5229	5322	5416	5511	5606	5701	5799	5896	6021	6081	6020	5932	6095	6615	7194	
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	107	104	104	106	
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120	120	121	121	121	121	121	
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	130	129	129	128	127	126	
	TOFL ~ FT	5007	5097	5187	5280	5374	5468	5562	5656	5752	5848	5971	6024	5958	5865	5757	6054	6592	
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	106	104	101	102	104
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	116	117	117	117	117	118	118	118
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	127	127	126	125	124	123	122
	TOFL ~ FT	4965	5054	5144	5236	5329	5422	5515	5608	5703	5798	5918	5965	5893	5795	5682	5589	5989	6500
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	111	109	106	103	101	99	101
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	114	114	115	115	115	115	115
	V_2 ~ KIAS	127	127	127	127	126	126	126	126	126	126	126	125	125	124	123	122	121	120
	TOFL ~ FT	4924	5012	5101	5192	5284	5376	5468	5560	5654	5748	5865	5906	5829	5725	5607	5509	5510	5989
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	103	101	98	97
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	112	111	111	112	112	113	113	113
	V_2 ~ KIAS	127	127	127	126	126	126	126	126	126	126	126	124	123	122	121	120	119	118
	TOFL ~ FT	4884	4972	5061	5151	5242	5333	5424	5515	5608	5700	5814	5848	5767	5658	5535	5431	5334	5478
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	103	100	98	94
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	108	109	110	110	110
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	126	126	124	121	120	119	118	117	116
	TOFL ~ FT	4845	4933	5021	5110	5200	5290	5380	5471	5562	5653	5764	5792	5705	5591	5464	5354	5250	5116
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	103	100	97	94
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	106	107	107	107
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	125	122	118	117	116	115	114
	TOFL ~ FT	4811	4898	4985	5074	5163	5252	5342	5431	5521	5611	5719	5740	5648	5529	5396	5280	5171	5032
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	97	94
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	103	103	104	104
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	125	122	118	115	114	113	112
	TOFL ~ FT	4781	4868	4955	5043	5131	5220	5308	5396	5485	5575	5679	5694	5596	5472	5334	5212	5096	4952
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	97	94
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	101	101
	V_2 ~ KIAS	128	128	128	128	128	128	128	127	127	127	127	125	122	119	115	112	110	110
	TOFL ~ FT	4757	4844	4930	5018	5106	5193	5281	5368	5456	5544	5646	5654	5550	5421	5277	5149	5026	4877

WET RUNWAY CONDITION

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Table 3

Flaps 15° **Field Pressure Altitude (2000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	114	116	118				
	V_R ~ KIAS	132	132	132	132	132	132	132	132	132	132	133	133	133	133				
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	139	139	138				
	TOFL ~ FT	5306	5398	5496	5594	5694	5794	5896	5998	6103	6225	6360	6702	7200	7748				
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	110	112	114	115			
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130			
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	137	137	136	136	135			
	TOFL ~ FT	5282	5375	5472	5570	5669	5769	5870	5971	6075	6196	6325	6281	6675	7189	7753			
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	110	108	110	111			
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126	127	127	127	127	127			
	V_2 ~ KIAS	136	136	136	136	136	135	135	135	135	135	135	135	134	133	133			
	TOFL ~ FT	5262	5355	5452	5550	5649	5748	5849	5949	6052	6172	6294	6244	6177	6639	7172			
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	110	108	105	107	109		
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	124	124	124	124	124	124		
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	131	131	130	129		
	TOFL ~ FT	5225	5317	5414	5511	5609	5708	5807	5907	6009	6127	6242	6188	6115	6083	6572	7129		
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	110	107	105	103	106	107	
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120	121	121	121	121	121	121	
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	130	130	129	128	127	127	126	
	TOFL ~ FT	5183	5275	5370	5467	5564	5662	5760	5859	5960	6075	6184	6125	6047	5944	6016	6530	7095	
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	110	107	105	102	101	103	
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	117	117	117	118	118	118	118	
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	127	126	125	125	124	123	
	TOFL ~ FT	5138	5230	5325	5420	5517	5613	5711	5808	5908	6021	6124	6060	5976	5869	5759	5932	6451	
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	110	107	105	102	99	100	102
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	114	114	115	115	115	115	115	115
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	125	124	123	122	122	121	120
	TOFL ~ FT	5094	5185	5279	5374	5470	5565	5662	5758	5856	5968	6063	5995	5906	5794	5679	5604	5936	6441
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	110	107	104	102	99	96	98
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	112	111	112	112	112	113	113	113
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125	123	122	121	120	119	119	118
	TOFL ~ FT	5052	5143	5236	5330	5425	5519	5615	5710	5807	5916	6005	5932	5839	5721	5602	5520	5429	5896
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	110	107	104	101	99	96	94
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	110	108	109	109	110	110	110
	V_2 ~ KIAS	127	127	127	127	127	127	126	126	126	126	125	122	120	119	118	117	117	116
	TOFL ~ FT	5011	5101	5194	5287	5381	5474	5568	5663	5758	5866	5948	5870	5772	5649	5525	5437	5331	5345
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	101	99	96	93
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	106	106	107	107	107
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	125	122	119	117	116	115	114	114
	TOFL ~ FT	4974	5064	5156	5248	5341	5434	5527	5620	5714	5820	5895	5813	5709	5582	5452	5358	5245	5112
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	111	109	107	104	101	99	96	93
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	103	104	104	105
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	126	123	120	116	114	113	112	111
	TOFL ~ FT	4943	5032	5124	5215	5307	5399	5491	5583	5676	5780	5848	5761	5652	5519	5384	5283	5164	5026
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	111	109	107	104	101	99	96	93
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	111	109	107	104	101	101	101	102
	V_2 ~ KIAS	128	128	128	128	127	127	127	127	127	127	126	123	120	116	113	111	110	109
	TOFL ~ FT	4917	5006	5097	5188	5279	5370	5461	5552	5644	5746	5807	5715	5600	5463	5322	5214	5089	4945

WET RUNWAY CONDITION

RGACTO002C

Table 4

Flaps 15°　　Field Pressure Altitude (3000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	114	115	117	119				
	V_R ~ KIAS	132	132	132	132	132	132	132	132	133	133	133	133	133	133				
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	139	139	138	138				
	TOFL ~ FT	5488	5590	5693	5796	5900	6006	6111	6219	6340	6478	6779	7219	7751	8345				
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	111	111	113	115				
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	130	130				
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	137	137	136	136	135				
	TOFL ~ FT	5463	5564	5667	5770	5874	5979	6083	6190	6310	6443	6410	6693	7190	7741				
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	110	108	109	111	113			
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	127	127	127	127	127	127			
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	134	133	133	132			
	TOFL ~ FT	5443	5544	5646	5748	5852	5956	6060	6166	6285	6412	6373	6314	6640	7152	7723			
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	112	110	108	106	107	109			
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	124	124	124	124	124			
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	132	131	131	130	129			
	TOFL ~ FT	5404	5504	5606	5707	5810	5914	6016	6122	6239	6359	6316	6253	6184	6552	7082			
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	112	110	108	106	103	105	107		
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120	121	121	121	121	121		
	V_2 ~ KIAS	131	131	131	131	131	131	130	130	130	130	130	129	128	128	127	126		
	TOFL ~ FT	5360	5459	5560	5661	5763	5865	5967	6071	6187	6301	6253	6185	6111	6011	6485	7034		
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	112	110	108	105	103	100	103	104	
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	117	117	117	118	118	118	118	
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	127	126	126	125	124	123	122	
	TOFL ~ FT	5313	5412	5512	5612	5713	5814	5915	6017	6131	6239	6188	6115	6035	5931	5893	6393	6948	
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	112	110	108	105	103	100	99	101	
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	114	114	115	115	115	115	115	115	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125	124	124	123	122	121	120	
	TOFL ~ FT	5267	5366	5464	5563	5663	5763	5862	5964	6076	6178	6122	6045	5960	5851	5765	5882	6396	
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	108	105	102	100	97	97	
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	111	112	112	112	113	113	113	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	123	122	121	121	120	119	118	
	TOFL ~ FT	5224	5321	5419	5517	5616	5714	5813	5913	6023	6119	6059	5978	5888	5773	5681	5587	5850	
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	108	105	102	100	97	94	
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	108	109	109	110	110	110	
	V_2 ~ KIAS	127	127	127	126	126	126	126	126	126	125	123	120	119	119	118	117	116	
	TOFL ~ FT	5181	5277	5374	5471	5569	5666	5764	5863	5971	6060	5996	5911	5816	5696	5599	5499	5401	
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	107	105	102	100	97	94	
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	107	105	106	107	107	107	
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	125	123	120	117	116	115	115	114	
	TOFL ~ FT	5142	5238	5334	5430	5527	5623	5720	5817	5924	6007	5938	5849	5748	5624	5520	5414	5310	
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	111	109	107	105	102	100	97	94	
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	107	105	103	104	104	104	
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	126	123	120	117	114	113	112	112	
	TOFL ~ FT	5108	5204	5299	5394	5490	5586	5681	5777	5882	5959	5886	5792	5686	5556	5447	5334	5224	
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	111	109	107	105	102	99	97	94	
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	111	109	107	105	102	100	101	102	
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	126	123	120	117	114	111	110	109	
	TOFL ~ FT	5081	5176	5271	5365	5460	5554	5649	5744	5847	5918	5840	5741	5629	5494	5379	5259	5142	

WET RUNWAY CONDITION

RGACTO002C

Table 5

Flaps 15° **Field Pressure Altitude (4000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	115	116	118					
	V_R ~ KIAS	132	132	132	132	132	133	133	133	133	133	133	133	133					
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	139	139	138	138					
	TOFL ~ FT	5685	5796	5905	6015	6125	6230	6337	6460	6602	6887	7314	7783	8352					
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	111	113	114					
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	130					
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	137	137	137	136	135					
	TOFL ~ FT	5659	5770	5878	5987	6097	6201	6307	6429	6565	6554	6782	7221	7755					
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	109	108	110	112				
	V_R ~ KIAS	126	126	126	126	126	126	126	127	127	127	127	127	127	127				
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	134	134	133	132				
	TOFL ~ FT	5637	5747	5855	5963	6072	6176	6283	6403	6534	6517	6472	6670	7165	7714				
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	111	108	106	106	108	110			
	V_R ~ KIAS	123	123	123	123	123	123	123	123	124	124	124	124	124	124	124			
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	132	132	131	130	130	129			
	TOFL ~ FT	5596	5705	5812	5920	6028	6131	6237	6355	6480	6459	6409	6350	6564	7072	7634			
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	110	108	106	104	104	106			
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	121	121	121	121	121			
	V_2 ~ KIAS	131	131	130	130	130	130	130	130	130	130	129	129	128	127	126			
	TOFL ~ FT	5550	5658	5764	5870	5977	6080	6184	6301	6420	6395	6341	6277	6203	6474	6995			
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	110	108	106	104	101	102	104		
	V_R ~ KIAS	116	116	116	116	116	116	116	116	117	117	117	117	118	118	118	118		
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	127	126	126	125	124	124	123		
	TOFL ~ FT	5502	5608	5713	5818	5924	6026	6129	6244	6358	6328	6269	6201	6122	6024	6357	6890		
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	110	108	106	104	101	98	100		
	V_R ~ KIAS	113	113	113	113	113	113	113	113	114	114	115	115	115	115	115	115		
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	124	124	123	122	121	121		
	TOFL ~ FT	5453	5558	5663	5767	5871	5972	6074	6187	6295	6261	6198	6125	6042	5938	5853	6344		
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	101	98	97		
	V_R ~ KIAS	113	113	112	112	112	112	112	112	112	111	112	112	112	113	113	113		
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	122	122	121	120	119	118		
	TOFL ~ FT	5407	5511	5614	5717	5821	5920	6022	6133	6235	6196	6130	6052	5963	5854	5764	5799		
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	101	98	95		
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	109	109	110	110	110		
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	120	120	119	118	117	117		
	TOFL ~ FT	5362	5465	5567	5668	5771	5869	5969	6079	6175	6132	6062	5980	5885	5771	5675	5578		
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	101	98	95		
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	106	107	107	107		
	V_2 ~ KIAS	127	127	127	127	127	126	126	126	125	123	120	118	116	116	115	114		
	TOFL ~ FT	5321	5423	5524	5624	5725	5823	5922	6030	6120	6073	5998	5912	5812	5693	5590	5487		
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	111	110	108	105	103	100	98	95		
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	103	104	104		
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	123	121	118	115	114	113	112		
	TOFL ~ FT	5285	5386	5486	5586	5686	5783	5881	5987	6071	6020	5940	5850	5744	5619	5511	5401		
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	111	109	107	105	103	100	98	95		
	V_R ~ KIAS	112	112	112	112	112	112	112	112	111	110	108	105	103	101	101	101		
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	124	121	118	115	112	111	110		
	TOFL ~ FT	5256	5355	5455	5553	5652	5748	5846	5950	6029	5972	5888	5793	5682	5552	5437	5321		

WET RUNWAY CONDITION

RGACTO002C

Table 6

Flaps 15° **Field Pressure Altitude (5000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	113	115	116	118						
	V_R ~ KIAS	132	133	133	133	133	133	133	133	133	133	133	133						
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	139	139	138	138						
	TOFL ~ FT	5894	6013	6126	6244	6350	6459	6598	6659	7010	7439	7887	8371						
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	111	112	114	115					
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	130					
	V_2 ~ KIAS	138	138	138	138	138	138	138	137	137	137	136	136	135					
	TOFL ~ FT	5867	5985	6097	6214	6321	6429	6566	6609	6623	6899	7318	7780	8356					
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	109	108	110	111					
	V_R ~ KIAS	126	126	126	127	127	127	127	127	127	127	127	127	127					
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	134	134	133	133					
	TOFL ~ FT	5844	5961	6073	6189	6296	6403	6539	6578	6586	6609	6762	7188	7725					
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	109	106	106	107	109				
	V_R ~ KIAS	123	123	123	123	123	123	123	123	124	124	124	124	124	124				
	V_2 ~ KIAS	133	133	133	133	133	133	133	132	132	132	131	130	130	129				
	TOFL ~ FT	5801	5917	6028	6143	6249	6356	6490	6525	6528	6546	6491	6586	7081	7625				
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	108	106	104	103	105	107			
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	121	121	121	121	121	121			
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	129	129	128	127	127	126			
	TOFL ~ FT	5753	5868	5977	6091	6197	6303	6434	6465	6464	6476	6417	6346	6483	6985	7545			
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	111	110	108	106	104	102	101	103			
	V_R ~ KIAS	116	116	116	116	116	116	116	116	117	117	117	118	118	118	118			
	V_2 ~ KIAS	128	128	128	128	128	128	128	127	127	126	126	125	125	124	123			
	TOFL ~ FT	5703	5815	5924	6036	6141	6247	6375	6403	6397	6404	6341	6266	6195	6346	6860			
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	111	110	108	106	104	102	99	100	101		
	V_R ~ KIAS	113	113	113	113	113	113	113	114	114	115	115	115	115	115	115	116		
	V_2 ~ KIAS	126	126	126	126	126	126	126	125	125	125	124	123	122	122	121	120		
	TOFL ~ FT	5652	5763	5871	5981	6086	6190	6317	6341	6330	6332	6265	6186	6109	6033	6314	6843		
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	111	110	108	106	104	102	99	96	98	100	
	V_R ~ KIAS	113	113	113	113	112	112	112	111	111	112	112	112	113	113	113	113	113	
	V_2 ~ KIAS	126	126	126	126	126	126	126	124	123	122	122	121	120	119	119	118	117	
	TOFL ~ FT	5604	5714	5820	5929	6033	6137	6260	6281	6266	6262	6191	6108	6026	5944	5853	6257	6794	
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	101	99	96	94	96	
	V_R ~ KIAS	112	112	112	112	112	112	112	111	110	108	109	109	110	110	110	110	110	
	V_2 ~ KIAS	126	126	126	126	126	126	126	124	122	120	120	119	118	117	117	116	115	
	TOFL ~ FT	5557	5665	5770	5878	5980	6083	6205	6222	6202	6193	6119	6031	5943	5856	5759	5674	6161	
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	101	99	96	94	92	
	V_R ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	106	106	107	107	107	107	
	V_2 ~ KIAS	127	126	126	126	126	126	126	125	123	120	118	117	116	115	114	114	113	
	TOFL ~ FT	5514	5620	5725	5831	5933	6035	6155	6168	6143	6129	6051	5959	5865	5772	5669	5569	5563	
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	101	99	96	93	90	
	V_R ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	103	104	104	104	105	
	V_2 ~ KIAS	127	127	127	127	127	127	126	125	123	121	118	115	114	113	112	111	111	
	TOFL ~ FT	5477	5581	5685	5790	5891	5993	6110	6119	6090	6071	5988	5892	5793	5693	5584	5478	5335	
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	110	109	108	106	103	101	99	96	93	90	
	V_R ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	103	101	100	101	102	102	
	V_2 ~ KIAS	127	127	127	127	127	127	127	125	123	121	118	116	113	111	110	109	108	
	TOFL ~ FT	5446	5549	5652	5755	5856	5957	6072	6078	6044	6019	5932	5832	5726	5620	5504	5391	5243	

WET RUNWAY CONDITION

RGACTO002C

Table 7

Flaps 15° **Field Pressure Altitude (6000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**
28,000 lb **12,701 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 133 140 6056	113 133 140 6195	113 133 140 6334	113 133 140 6474	113 133 140 6608	113 133 140 6685	112 133 139 6854	114 133 139 7199	115 133 139 7593	116 133 138 8035	117 133 138 8501							
27,000 lb **12,247 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 130 138 6030	113 130 138 6168	113 130 138 6305	113 130 138 6444	113 130 138 6577	112 130 137 6652	111 130 137 6690	110 130 137 6729	111 130 137 7044	112 130 136 7457	114 130 136 7902	115 130 135 8400						
26,000 lb **11,793 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 126 135 6010	113 126 135 6145	113 127 135 6281	113 127 135 6418	113 127 135 6550	112 127 135 6623	111 127 135 6658	110 127 134 6692	109 127 134 6754	108 127 134 6892	110 127 133 7303	111 127 133 7772	113 127 132 8338					
25,000 lb **11,340 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 123 133 5968	113 123 133 6102	113 123 133 6236	113 123 133 6371	113 123 133 6501	112 123 133 6572	111 123 132 6603	110 124 132 6634	109 124 132 6690	107 124 131 6649	105 124 131 6694	107 124 130 7125	109 124 129 7651					
24,000 lb **10,886 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 120 130 5921	113 120 130 6052	113 120 130 6184	113 120 130 6317	113 120 130 6446	112 120 130 6515	111 120 130 6543	110 120 129 6568	109 121 129 6619	107 121 129 6574	105 121 128 6512	103 121 127 6525	105 121 127 7009	106 121 126 7549				
23,000 lb **10,433 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 116 128 5871	113 116 128 6000	113 116 128 6130	113 116 128 6260	113 116 128 6387	112 116 128 6454	111 117 127 6479	110 117 127 6500	108 117 126 6545	107 118 126 6496	104 118 125 6430	102 118 125 6364	101 118 124 6369	102 118 123 6862	104 118 123 7412			
22,000 lb **9979 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 113 126 5821	113 113 126 5948	113 113 126 6076	113 113 126 6204	113 113 126 6329	112 113 126 6394	111 114 125 6416	109 114 125 6432	108 115 125 6472	106 115 124 6419	104 115 123 6349	102 115 123 6278	100 115 122 6220	99 115 121 6315	101 116 120 6828	102 116 120 7386		
21,000 lb **9525 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 126 5773	112 112 126 5898	112 112 126 6024	112 113 126 6150	112 112 126 6273	112 112 125 6336	111 111 123 6355	109 111 123 6367	108 112 122 6401	106 112 122 6344	104 112 121 6270	102 113 120 6195	100 113 120 6130	97 113 119 6043	97 113 118 6244	99 113 117 6761		
20,000 lb **9072 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 126 5727	112 112 126 5849	112 112 126 5973	112 112 126 6096	112 112 126 6218	112 112 125 6279	110 111 124 6294	109 109 122 6303	108 108 120 6330	106 109 120 6269	104 109 119 6192	102 109 118 6112	100 110 118 6041	97 110 117 5948	95 110 116 5865	95 110 116 6129		
19,000 lb **8618 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 127 5685	112 112 126 5805	112 112 126 5926	112 112 126 6048	112 112 126 6168	111 112 125 6227	110 110 124 6239	109 109 122 6243	108 108 120 6265	106 106 118 6200	104 106 117 6118	102 106 116 6034	100 107 115 5957	97 107 115 5858	95 107 114 5769	92 107 113 5646		
18,000 lb **8165 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 127 5649	112 112 127 5767	112 112 127 5886	112 112 127 6005	112 112 127 6124	111 111 126 6182	110 110 124 6190	109 109 122 6189	108 108 121 6205	106 106 118 6136	104 104 116 6051	102 103 114 5962	100 104 113 5879	97 104 112 5774	94 104 112 5677	92 105 111 5548		
17,000 lb **7711 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 127 5619	112 112 127 5735	112 112 127 5852	112 112 127 5969	112 112 127 6087	111 111 126 6142	110 110 124 6147	109 109 123 6142	108 108 121 6152	106 106 119 6079	104 104 116 5989	102 102 113 5896	99 100 111 5806	97 101 110 5695	94 101 109 5592	92 102 109 5456		

WET RUNWAY CONDITION

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Table 8

Flaps 15° **Field Pressure Altitude (7000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	112	113	114	115	116	117								
	V_R ~ KIAS	132	132	133	133	133	133	133	133	133	133								
	V_2 ~ KIAS	140	140	140	140	140	139	139	139	138	138								
	TOFL ~ FT	6230	6397	6572	6735	6802	7088	7404	7773	8180	8656								
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	112	110	110	111	112	114	115							
	V_R ~ KIAS	129	130	130	130	130	130	130	130	130	130	130							
	V_2 ~ KIAS	138	138	138	138	137	137	137	136	136	136	135							
	TOFL ~ FT	6209	6372	6543	6702	6740	6767	6871	7212	7591	8047	8517							
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	112	110	109	108	108	109	111	112						
	V_R ~ KIAS	126	126	127	127	127	127	127	127	127	127	127	127						
	V_2 ~ KIAS	136	135	135	135	135	135	134	134	134	133	133	132						
	TOFL ~ FT	6192	6351	6518	6673	6709	6734	6766	6780	7016	7437	7884	8379						
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	112	110	109	108	106	105	107	108	110					
	V_R ~ KIAS	123	123	123	123	123	123	124	124	124	124	124	124	124					
	V_2 ~ KIAS	133	133	133	133	132	132	132	131	131	131	130	130	129					
	TOFL ~ FT	6154	6309	6472	6622	6656	6677	6706	6716	6714	6819	7228	7694	8249					
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	111	110	109	108	106	105	103	104	106					
	V_R ~ KIAS	120	120	120	120	120	120	120	121	121	121	121	121	121					
	V_2 ~ KIAS	131	131	130	130	130	130	129	129	128	128	128	127	126					
	TOFL ~ FT	6109	6260	6418	6565	6595	6614	6640	6645	6639	6650	6622	7048	7567					
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	111	110	109	108	106	104	102	100	102	104				
	V_R ~ KIAS	116	116	116	116	116	117	117	117	117	118	118	118	118	118				
	V_2 ~ KIAS	128	128	128	128	127	127	127	126	126	125	125	124	124	123				
	TOFL ~ FT	6062	6209	6362	6504	6533	6549	6571	6572	6562	6567	6510	6463	6878	7413				
22,000 lb 9979 kg	V_1 ~ KIAS	112	112	113	112	111	110	109	107	106	104	102	100	98	100	102			
	V_R ~ KIAS	113	113	113	113	114	114	114	115	115	115	115	115	115	116	116			
	V_2 ~ KIAS	126	126	126	126	125	125	125	124	124	123	123	122	121	121	120			
	TOFL ~ FT	6015	6157	6306	6444	6470	6483	6502	6499	6484	6484	6423	6371	6332	6828	7372			
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	111	110	109	107	106	104	102	100	98	96	98	100		
	V_R ~ KIAS	112	112	112	112	111	111	111	112	112	112	113	113	113	113	113	113		
	V_2 ~ KIAS	126	126	126	125	124	123	123	122	122	121	120	120	119	118	118	117		
	TOFL ~ FT	5970	6109	6253	6386	6410	6420	6436	6429	6409	6404	6339	6281	6218	6245	6748	7300		
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	111	110	109	107	106	104	102	100	98	95	94	96		
	V_R ~ KIAS	112	112	112	112	111	110	109	108	109	109	109	110	110	110	110	110		
	V_2 ~ KIAS	127	126	126	126	124	123	121	120	119	119	118	118	117	117	116	115		
	TOFL ~ FT	5926	6061	6200	6328	6350	6358	6370	6360	6335	6325	6256	6193	6124	6041	6113	6624		
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	111	110	108	107	105	104	102	100	98	95	93	92		
	V_R ~ KIAS	112	112	112	112	111	110	109	107	106	106	106	107	107	107	107	107		
	V_2 ~ KIAS	127	127	126	126	125	123	121	120	118	117	116	115	115	114	114	113		
	TOFL ~ FT	5888	6018	6153	6276	6296	6301	6310	6295	6266	6251	6177	6110	6034	5945	5835	5980		
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	111	109	108	107	105	104	102	100	98	95	93	90		
	V_R ~ KIAS	112	112	112	112	111	109	108	107	105	104	103	104	104	104	105	105		
	V_2 ~ KIAS	127	127	127	126	125	123	122	120	118	116	114	113	113	112	111	110		
	TOFL ~ FT	5855	5981	6111	6230	6248	6250	6256	6237	6203	6182	6104	6032	5950	5854	5738	5611		
17,000 lb 7711 kg	V_1 ~ KIAS	111	111	112	111	110	109	108	107	105	104	102	100	98	95	92	90		
	V_R ~ KIAS	111	112	112	112	110	109	108	107	105	104	102	100	101	101	102	102		
	V_2 ~ KIAS	128	127	127	126	125	124	122	120	118	116	114	111	110	110	109	108		
	TOFL ~ FT	5829	5951	6076	6191	6207	6206	6208	6185	6147	6120	6038	5960	5872	5769	5647	5514		

WET RUNWAY CONDITION

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Table 9

Flaps 15° **Field Pressure Altitude (8000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 132 140 6543	113 133 140 6723	112 133 140 6813	113 133 139 7042	114 133 139 7342	114 133 139 7665	115 133 139 8000	116 133 138 8401	117 133 138 8847									
27,000 lb 12,247 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 130 138 6517	113 130 138 6692	112 130 137 6779	111 130 137 6824	110 130 137 6859	110 130 137 7113	111 130 136 7425	112 130 136 7801	114 130 136 8224	115 130 135 8689								
26,000 lb 11,793 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 126 135 6496	113 126 135 6667	112 127 135 6749	111 127 135 6791	110 127 134 6822	109 127 134 6844	107 127 134 6868	108 127 133 7212	110 127 133 7604	111 127 133 8044	112 127 132 8513							
25,000 lb 11,340 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 123 133 6452	113 123 133 6618	112 123 133 6697	111 123 132 6736	110 124 132 6764	108 124 132 6782	107 124 131 6791	106 124 131 6819	105 124 131 6972	107 124 130 7376	108 124 130 7820	109 124 129 8308						
24,000 lb 10,886 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 120 131 6402	113 120 130 6563	112 120 130 6638	111 120 130 6673	110 120 129 6698	108 120 129 6714	107 121 129 6719	106 121 128 6743	105 121 128 6797	103 121 128 6760	104 121 127 7165	105 121 127 7617	107 121 126 8174					
23,000 lb 10,433 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 116 128 6349	113 116 128 6505	112 116 127 6576	111 117 127 6608	109 117 127 6630	108 117 126 6642	107 117 126 6645	106 117 126 6664	105 118 125 6712	103 118 125 6671	101 118 124 6633	101 118 124 6924	102 118 124 7514					
22,000 lb 9979 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 113 126 6296	113 113 126 6448	112 113 126 6515	111 114 125 6543	109 114 125 6562	108 114 124 6572	107 115 124 6571	106 115 124 6586	104 115 123 6628	103 115 123 6583	101 115 122 6540	99 115 121 6492	100 116 121 6854	101 116 120 7389				
21,000 lb 9525 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 126 6246	112 112 126 6392	112 112 125 6455	110 111 123 6481	109 111 123 6497	108 111 122 6503	107 112 122 6500	105 112 121 6510	104 112 121 6546	102 113 121 6497	101 113 120 6449	99 113 119 6396	96 113 119 6335	98 113 118 6762	100 113 117 7306			
20,000 lb 9072 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 126 6197	112 112 126 6338	111 112 125 6397	110 110 123 6419	109 109 122 6432	108 108 120 6436	107 108 120 6430	105 109 119 6435	104 109 119 6466	102 110 118 6411	101 110 118 6359	98 110 117 6301	96 110 117 6234	94 110 116 6132	96 110 115 6626			
19,000 lb 8618 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 127 6153	112 112 126 6289	111 111 125 6344	110 110 124 6363	109 109 122 6373	108 108 121 6373	106 107 119 6364	105 105 117 6365	104 106 117 6390	102 106 116 6331	100 107 116 6275	98 107 115 6211	96 107 114 6137	94 107 114 6026	91 107 113 5980			
18,000 lb 8165 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 112 127 6115	112 112 127 6246	111 111 125 6297	110 110 124 6313	109 109 122 6319	108 108 121 6317	106 106 119 6305	105 105 117 6301	104 104 116 6320	102 103 114 6257	100 104 114 6196	98 104 113 6127	96 104 112 6046	93 105 111 5929	91 105 111 5819			
17,000 lb 7711 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 112 127 6084	112 112 127 6210	111 111 126 6258	110 110 124 6269	109 109 123 6273	107 107 121 6267	106 106 119 6253	105 105 118 6244	104 104 116 6257	102 102 114 6189	100 101 112 6123	98 101 111 6050	96 101 110 5961	93 102 109 5838	91 102 108 5722			

WET RUNWAY CONDITION

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Table 10

Flaps 15° **Field Pressure Altitude (9000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	113	112	113	114	115	116	117											
	V_R ~ KIAS	133	133	133	133	133	133	133											
	V_2 ~ KIAS	140	140	139	139	139	138	138											
	TOFL ~ FT	6858	6968	7282	7608	7935	8278	8638											
27,000 lb 12,247 kg	V_1 ~ KIAS	113	112	110	110	111	112	113	114										
	V_R ~ KIAS	130	130	130	130	130	130	130	130										
	V_2 ~ KIAS	137	137	137	137	136	136	136	135										
	TOFL ~ FT	6824	6863	6904	7062	7365	7687	8026	8427										
26,000 lb 11,793 kg	V_1 ~ KIAS	113	111	110	109	108	108	109	110	111	112								
	V_R ~ KIAS	127	127	127	127	127	127	127	127	127	127								
	V_2 ~ KIAS	135	135	135	134	134	134	133	133	133	132								
	TOFL ~ FT	6796	6831	6869	6901	6922	7109	7421	7794	8210	8680								
25,000 lb 11,340 kg	V_1 ~ KIAS	113	111	110	109	108	106	105	106	107	108	109							
	V_R ~ KIAS	123	123	124	124	124	124	124	124	124	124	124							
	V_2 ~ KIAS	133	132	132	132	131	131	131	130	130	130	129							
	TOFL ~ FT	6744	6777	6811	6840	6858	6868	6894	7147	7529	7973	8439							
24,000 lb 10,886 kg	V_1 ~ KIAS	113	111	110	109	108	106	105	104	103	104	105	107						
	V_R ~ KIAS	120	120	120	120	121	121	121	121	121	121	121	121						
	V_2 ~ KIAS	130	130	130	129	129	129	128	128	127	127	127	126						
	TOFL ~ FT	6685	6715	6747	6772	6787	6795	6816	6827	6900	7306	7738	8235						
23,000 lb 10,433 kg	V_1 ~ KIAS	112	111	110	109	107	106	105	104	102	101	101	103	104					
	V_R ~ KIAS	116	117	117	117	117	117	117	118	118	118	118	118	118					
	V_2 ~ KIAS	128	127	127	127	126	126	125	125	125	124	124	123	122					
	TOFL ~ FT	6623	6651	6679	6701	6713	6718	6736	6743	6751	6773	7035	7554	8047					
22,000 lb 9979 kg	V_1 ~ KIAS	112	111	110	109	107	106	105	104	102	101	99	99	101	102				
	V_R ~ KIAS	113	114	114	114	114	115	115	115	115	115	115	115	116	116				
	V_2 ~ KIAS	126	125	125	125	124	124	124	123	123	122	122	121	120	120				
	TOFL ~ FT	6562	6587	6612	6631	6640	6642	6657	6659	6662	6678	6638	6898	7431	7994				
21,000 lb 9525 kg	V_1 ~ KIAS	112	111	110	109	107	106	105	103	102	101	99	97	97	99				
	V_R ~ KIAS	112	111	111	111	111	112	112	112	113	113	113	113	113	113				
	V_2 ~ KIAS	125	124	123	123	122	122	121	121	120	120	119	119	118	117				
	TOFL ~ FT	6503	6525	6547	6563	6569	6568	6580	6578	6575	6586	6541	6486	6786	7323				
20,000 lb 9072 kg	V_1 ~ KIAS	112	111	110	108	107	106	105	103	102	101	99	97	94	95	97			
	V_R ~ KIAS	112	111	110	108	108	108	109	109	109	110	110	110	110	110	110			
	V_2 ~ KIAS	125	124	122	121	120	120	119	119	118	118	117	117	116	116	115			
	TOFL ~ FT	6445	6465	6483	6496	6499	6495	6504	6497	6490	6495	6445	6385	6316	6639	7173			
19,000 lb 8618 kg	V_1 ~ KIAS	112	111	109	108	107	106	105	103	102	100	99	96	94	92	93			
	V_R ~ KIAS	112	111	110	108	107	106	105	106	106	107	107	107	107	107	107			
	V_2 ~ KIAS	126	124	123	121	120	118	117	117	116	116	115	114	114	113	113			
	TOFL ~ FT	6393	6409	6425	6435	6435	6428	6433	6422	6410	6409	6355	6289	6213	6121	6472			
18,000 lb 8165 kg	V_1 ~ KIAS	112	110	109	108	107	106	104	103	102	100	98	96	94	92	89			
	V_R ~ KIAS	112	111	109	108	107	106	104	103	103	104	104	104	105	105	105			
	V_2 ~ KIAS	126	124	123	121	120	118	117	115	114	114	113	112	112	111	110			
	TOFL ~ FT	6347	6361	6373	6379	6376	6367	6369	6353	6335	6329	6270	6198	6116	6017	5916			
17,000 lb 7711 kg	V_1 ~ KIAS	111	110	109	108	107	105	104	103	101	100	98	96	94	92	89			
	V_R ~ KIAS	111	110	109	108	107	105	104	103	102	101	101	101	102	102	102			
	V_2 ~ KIAS	126	125	123	122	120	118	117	115	113	112	111	110	109	109	108			
	TOFL ~ FT	6307	6319	6328	6331	6325	6312	6311	6291	6268	6255	6192	6114	6025	5919	5812			

WET RUNWAY CONDITION

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Table 11

Flaps 15° **Field Pressure Altitude (10,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**
28,000 lb 12,701 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 133 139 7241	114 133 139 7544	115 133 139 7879	115 133 139 8226	116 133 138 8578	117 133 138 8946												
27,000 lb 12,247 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 130 137 6952	110 130 137 7003	111 130 136 7313	112 130 136 7638	112 130 136 7970	113 130 136 8316	114 130 135 8677											
26,000 lb 11,793 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 127 135 6917	110 127 134 6948	108 127 134 6980	108 127 134 7066	108 127 133 7371	109 127 133 7692	110 127 133 8026	111 127 133 8440										
25,000 lb 11,340 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 124 132 6859	109 124 132 6888	108 124 131 6916	107 124 131 6939	106 124 131 6957	105 124 131 7057	106 124 130 7362	107 124 130 7745	108 124 130 8157	109 124 129 8625								
24,000 lb 10,886 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	111 120 130 6795	109 120 129 6821	108 121 129 6846	107 121 129 6865	106 121 128 6880	104 121 128 6899	103 121 128 6908	103 121 127 7100	104 121 127 7476	105 121 127 7910	106 121 126 8378							
23,000 lb 10,433 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 117 127 6727	109 117 127 6750	108 117 126 6772	107 117 126 6789	106 117 126 6801	104 117 125 6816	103 117 125 6823	102 118 125 6863	101 118 124 6923	101 118 124 7192	103 118 123 7675	104 118 123 8110						
22,000 lb 9979 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 114 125 6660	109 114 125 6680	108 114 124 6699	107 115 124 6713	105 115 124 6721	104 115 123 6734	103 115 123 6737	102 115 122 6773	101 115 122 6826	99 115 122 6800	99 116 121 7020	100 116 120 7475	102 116 120 8041					
21,000 lb 9525 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 111 123 6596	109 111 123 6613	108 111 122 6629	107 112 122 6639	105 112 121 6645	104 112 121 6654	103 112 121 6655	102 113 120 6685	101 113 120 6732	99 113 119 6701	97 113 119 6653	97 113 118 6840	99 113 118 7366	100 113 117 7930				
20,000 lb 9072 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 110 123 6532	109 109 121 6547	108 108 120 6560	106 108 120 6567	105 109 119 6570	104 109 119 6576	103 109 119 6573	102 110 118 6598	101 110 118 6639	99 110 117 6603	97 110 117 6550	95 110 116 6494	95 110 116 6679	96 110 115 7216	98 110 115 7757			
19,000 lb 8618 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 110 123 6474	109 109 122 6487	108 108 120 6496	106 106 119 6500	105 105 117 6500	104 106 117 6503	103 106 116 6497	101 106 116 6517	100 107 116 6551	99 107 115 6511	97 107 115 6452	95 107 114 6391	93 107 113 6321	92 108 113 6496	94 108 112 7008			
18,000 lb 8165 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 110 123 6422	109 109 122 6432	107 107 120 6439	106 106 119 6439	105 105 117 6436	104 104 116 6436	102 103 114 6427	101 103 114 6441	100 104 114 6470	99 104 113 6424	97 104 112 6361	95 105 112 6293	92 105 111 6216	90 105 110 6132	90 105 110 6306			
17,000 lb 7711 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 110 124 6378	108 108 122 6385	107 107 121 6388	106 106 119 6386	105 105 118 6379	104 104 116 6376	102 102 114 6364	101 101 113 6373	100 101 112 6395	98 101 111 6344	97 101 110 6276	95 102 109 6203	92 102 109 6118	90 102 108 6027	88 102 107 5907			

WET RUNWAY CONDITION

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Table 12

Flaps 15° Field Pressure Altitude (11,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**
28,000 lb **12,701 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	114 133 139 7844	115 133 139 8168	116 133 138 8524	117 133 138 8898														
27,000 lb **12,247 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	110 130 137 7282	111 130 136 7584	112 130 136 7919	113 130 136 8271	114 130 135 8625													
26,000 lb **11,793 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	109 127 134 7009	107 127 134 7040	108 127 134 7324	109 127 133 7651	110 127 133 7976	110 127 133 8322	111 127 132 8689											
25,000 lb **11,340 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	109 124 132 6946	107 124 131 6974	106 124 131 7004	105 124 131 7035	106 124 130 7318	106 124 130 7636	107 124 130 7975	108 124 129 8382										
24,000 lb **10,886 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 121 129 6876	107 121 129 6901	106 121 128 6928	105 121 128 6955	104 121 128 6972	102 121 127 7003	103 121 127 7314	104 121 127 7687	105 121 127 8089	106 121 126 8556								
23,000 lb **10,433 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 117 126 6803	107 117 126 6826	106 117 126 6849	105 117 125 6873	103 117 125 6887	102 118 125 6903	101 118 124 6932	100 118 124 6994	101 118 124 7356	103 118 123 7834	104 118 123 8253							
22,000 lb **9979 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 114 125 6730	107 115 124 6750	106 115 124 6771	105 115 123 6791	103 115 123 6802	102 115 123 6815	101 115 122 6840	100 115 122 6868	98 115 121 6888	99 116 121 7172	100 116 120 7608	102 116 120 8106						
21,000 lb **9525 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 111 122 6660	107 112 122 6678	106 112 122 6695	105 112 121 6712	103 112 121 6720	102 112 120 6729	101 112 120 6751	100 113 120 6774	98 113 119 6788	97 113 119 6790	97 113 118 6963	98 113 118 7425	100 113 117 7969					
20,000 lb **9072 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 108 120 6591	107 108 120 6606	106 109 119 6620	104 109 119 6634	103 109 119 6639	102 109 118 6645	101 110 118 6663	100 110 118 6681	98 110 117 6689	97 110 117 6686	95 110 116 6641	94 110 116 6733	96 110 115 7249	97 110 115 7768				
19,000 lb **8618 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 108 120 6528	107 107 119 6540	105 106 118 6551	104 106 117 6561	103 106 116 6563	102 106 116 6566	101 106 116 6580	100 107 115 6593	98 107 115 6596	97 107 115 6586	95 107 114 6537	93 107 114 6472	92 108 113 6528	93 108 112 7038				
18,000 lb **8165 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 108 121 6471	107 107 119 6481	105 105 118 6488	104 104 116 6495	103 103 115 6494	102 103 114 6493	101 103 114 6504	99 104 113 6511	98 104 113 6509	97 104 112 6493	95 105 112 6439	93 105 111 6367	91 105 111 6296	89 105 110 6315				
17,000 lb **7711 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	107 108 121 6421	106 106 120 6428	105 105 118 6432	104 104 116 6436	103 103 115 6431	102 102 113 6428	100 101 112 6435	99 100 111 6437	98 101 111 6428	96 101 110 6407	95 102 110 6347	93 102 109 6270	90 102 108 6191	88 102 107 6098				

WET RUNWAY CONDITION

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Table 13

Flaps 15° **Field Pressure Altitude (12,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	116 133 138 8587	117 133 138 8937																
27,000 lb **12,247 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 130 136 7978	113 130 136 8306	113 130 136 8664	114 130 135 9051														
26,000 lb **11,793 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	108 127 134 7381	109 127 133 7683	109 127 133 8017	110 127 133 8377	111 127 132 8730													
25,000 lb **11,340 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	107 124 131 7124	105 124 131 7155	105 124 130 7356	106 124 130 7688	107 124 130 8014	108 124 130 8361												
24,000 lb **10,886 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	106 121 129 7047	105 121 128 7075	104 121 128 7099	103 121 128 7125	103 121 127 7351	104 121 127 7668	105 121 127 7996	106 121 126 8415										
23,000 lb **10,433 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	106 117 126 6967	105 117 126 6992	104 118 125 7013	103 118 125 7035	102 118 125 7065	100 118 124 7096	100 118 124 7280	102 118 124 7658	102 118 123 8113	104 118 123 8527								
22,000 lb **9979 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	106 115 124 6888	105 115 124 6910	104 115 123 6928	103 115 123 6946	101 115 122 6973	100 115 122 7000	99 115 122 7029	98 115 121 7078	99 116 121 7431	100 116 120 7863	102 116 120 8334							
21,000 lb **9525 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	106 112 122 6811	105 112 121 6830	104 112 121 6845	103 112 121 6860	101 112 120 6883	100 113 120 6907	99 113 120 6933	98 113 119 6975	97 113 119 7010	97 113 118 7197	98 113 118 7635	98 113 117 8138						
20,000 lb **9072 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	106 109 120 6735	105 109 119 6752	104 109 119 6763	102 109 118 6775	101 109 118 6794	100 110 118 6814	99 110 118 6837	98 110 117 6873	97 110 117 6902	95 110 116 6873	94 110 116 6926	95 110 115 7384	97 110 115 7904					
19,000 lb **8618 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	106 106 118 6665	105 106 117 6679	104 106 117 6688	102 106 116 6696	101 106 116 6712	100 107 116 6728	99 107 115 6747	98 107 115 6777	97 107 115 6800	95 107 114 6765	93 107 114 6707	91 108 113 6667	93 108 113 7138	94 108 112 7651				
18,000 lb **8165 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	106 106 118 6602	105 105 117 6613	103 104 115 6618	102 103 114 6623	101 103 114 6635	100 103 113 6648	99 104 113 6663	98 104 113 6687	97 104 112 6704	95 105 112 6664	93 105 111 6600	91 105 111 6536	89 105 110 6465	90 105 110 6888				
17,000 lb **7711 kg**	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	106 106 118 6546	104 104 117 6554	103 103 115 6556	102 102 114 6557	101 101 113 6566	100 100 111 6575	99 100 111 6586	98 101 110 6605	96 101 110 6615	95 102 110 6569	93 102 109 6500	91 102 108 6430	89 102 108 6352	87 102 107 6270				

WET RUNWAY CONDITION

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Table 14

Flaps 15° **Field Pressure Altitude (13,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS																		
	V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL ~ FT																		
27,000 lb **12,247 kg**	V_1 ~ KIAS																		
	V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL ~ FT																		
26,000 lb **11,793 kg**	V_1 ~ KIAS	109	110	111															
	V_R ~ KIAS	127	127	127															
	V_2 ~ KIAS	133	133	133															
	TOFL ~ FT	8153	8488	8856															
25,000 lb **11,340 kg**	V_1 ~ KIAS	105	106	107	108	108													
	V_R ~ KIAS	124	124	124	124	124													
	V_2 ~ KIAS	131	130	130	130	129													
	TOFL ~ FT	7483	7789	8129	8495	8854													
24,000 lb **10,886 kg**	V_1 ~ KIAS	104	103	103	104	104	105												
	V_R ~ KIAS	121	121	121	121	121	121												
	V_2 ~ KIAS	128	128	127	127	127	127												
	TOFL ~ FT	7281	7311	7455	7795	8123	8467												
23,000 lb **10,433 kg**	V_1 ~ KIAS	104	103	102	101	100	101	102	103										
	V_R ~ KIAS	118	118	118	118	118	118	118	118										
	V_2 ~ KIAS	125	125	125	124	124	124	123	123										
	TOFL ~ FT	7194	7220	7253	7295	7393	7703	8044	8453										
22,000 lb **9979 kg**	V_1 ~ KIAS	104	103	102	101	100	99	98	99	100	101								
	V_R ~ KIAS	115	115	115	115	115	115	115	115	115	116								
	V_2 ~ KIAS	123	123	123	122	122	121	121	121	120	120								
	TOFL ~ FT	7106	7130	7160	7197	7230	7259	7418	7788	8206	8685								
21,000 lb **9525 kg**	V_1 ~ KIAS	104	103	102	101	100	98	97	96	97	98	99							
	V_R ~ KIAS	112	112	112	113	113	113	113	113	113	113	113							
	V_2 ~ KIAS	121	121	120	120	120	119	119	119	118	118	117							
	TOFL ~ FT	7022	7043	7069	7103	7132	7157	7173	7200	7512	7958	8449							
20,000 lb **9072 kg**	V_1 ~ KIAS	104	103	102	101	99	98	97	96	95	94	95	97						
	V_R ~ KIAS	109	109	109	110	110	110	110	110	110	110	110	110						
	V_2 ~ KIAS	119	119	118	118	118	117	117	117	116	116	116	115						
	TOFL ~ FT	6939	6957	6980	7009	7034	7056	7068	7090	7110	7220	7660	8153						
19,000 lb **8618 kg**	V_1 ~ KIAS	104	103	102	100	99	98	97	96	95	93	91	92	94					
	V_R ~ KIAS	106	106	106	107	107	107	107	107	107	107	107	108	108					
	V_2 ~ KIAS	117	116	116	116	115	115	115	114	114	114	113	113	112					
	TOFL ~ FT	6862	6877	6896	6921	6943	6961	6969	6985	6999	6982	6934	7363	7871					
18,000 lb **8165 kg**	V_1 ~ KIAS	104	103	101	100	99	98	97	96	94	93	91	89	90					
	V_R ~ KIAS	104	103	103	103	104	104	104	104	105	105	105	105	105					
	V_2 ~ KIAS	116	114	114	114	113	113	112	112	112	111	111	110	110					
	TOFL ~ FT	6791	6803	6819	6840	6858	6872	6876	6887	6895	6872	6818	6751	7087					
17,000 lb **7711 kg**	V_1 ~ KIAS	104	102	101	100	99	98	97	96	94	93	91	89	87					
	V_R ~ KIAS	104	102	101	101	100	101	101	101	102	102	102	102	102					
	V_2 ~ KIAS	116	114	113	112	111	111	110	110	109	109	108	108	107					
	TOFL ~ FT	6728	6738	6750	6766	6781	6791	6792	6796	6798	6768	6709	6636	6557					

WET RUNWAY CONDITION

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Table 15

Flaps 15° **Field Pressure Altitude (14,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS																		
	V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL ~ FT																		
27,000 lb **12,247 kg**	V_1 ~ KIAS																		
	V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL ~ FT																		
26,000 lb **11,793 kg**	V_1 ~ KIAS																		
	V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL ~ FT																		
25,000 lb **11,340 kg**	V_1 ~ KIAS	107	107	108															
	V_R ~ KIAS	124	124	124															
	V_2 ~ KIAS	130	130	129															
	TOFL ~ FT	8277	8615	8989															
24,000 lb **10,886 kg**	V_1 ~ KIAS	103	103	104	105	106													
	V_R ~ KIAS	121	121	121	121	121													
	V_2 ~ KIAS	128	127	127	127	126													
	TOFL ~ FT	7592	7901	8250	8621	8975													
23,000 lb **10,433 kg**	V_1 ~ KIAS	102	101	100	101	101	102	103											
	V_R ~ KIAS	118	118	118	118	118	118	118											
	V_2 ~ KIAS	125	124	124	124	123	123	123											
	TOFL ~ FT	7452	7486	7530	7846	8168	8519	8895											
22,000 lb **9979 kg**	V_1 ~ KIAS	102	101	100	99	98	99	100	101										
	V_R ~ KIAS	115	115	115	115	115	115	115	115										
	V_2 ~ KIAS	123	122	122	122	121	121	121	120										
	TOFL ~ FT	7356	7387	7426	7469	7534	7856	8206	8625										
21,000 lb **9525 kg**	V_1 ~ KIAS	102	101	100	99	98	97	96	97	98	99								
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113								
	V_2 ~ KIAS	120	120	120	119	119	119	119	118	118	117								
	TOFL ~ FT	7263	7291	7327	7365	7384	7408	7519	7903	8329	8813								
20,000 lb **9072 kg**	V_1 ~ KIAS	102	101	100	99	98	96	95	94	94	95	96							
	V_R ~ KIAS	109	110	110	110	110	110	110	110	110	110	110							
	V_2 ~ KIAS	118	118	118	117	117	117	117	116	116	116	115							
	TOFL ~ FT	7172	7197	7228	7262	7277	7298	7331	7388	7558	7997	8475							
19,000 lb **8618 kg**	V_1 ~ KIAS	102	101	100	99	97	96	95	94	93	91	92	94	95					
	V_R ~ KIAS	106	107	107	107	107	107	107	107	107	108	108	108	108					
	V_2 ~ KIAS	116	116	115	115	115	115	114	114	114	113	113	112	112					
	TOFL ~ FT	7086	7108	7135	7164	7177	7193	7222	7272	7278	7246	7656	8131	8668					
18,000 lb **8165 kg**	V_1 ~ KIAS	102	101	100	99	97	96	95	94	93	91	89	90	91					
	V_R ~ KIAS	103	103	104	104	104	104	104	105	105	105	105	105	105					
	V_2 ~ KIAS	114	114	113	113	113	112	112	112	111	111	110	110	109					
	TOFL ~ FT	7007	7026	7049	7074	7083	7096	7120	7163	7163	7125	7066	7326	7812					
17,000 lb **7711 kg**	V_1 ~ KIAS	102	101	99	98	97	96	95	94	93	91	89	87	87					
	V_R ~ KIAS	102	101	100	101	101	101	101	102	102	102	102	102	102					
	V_2 ~ KIAS	113	112	111	111	110	110	110	109	109	108	108	107	106					
	TOFL ~ FT	6937	6952	6971	6992	6997	7006	7026	7062	7055	7011	6946	6862	6999					

WET RUNWAY CONDITION

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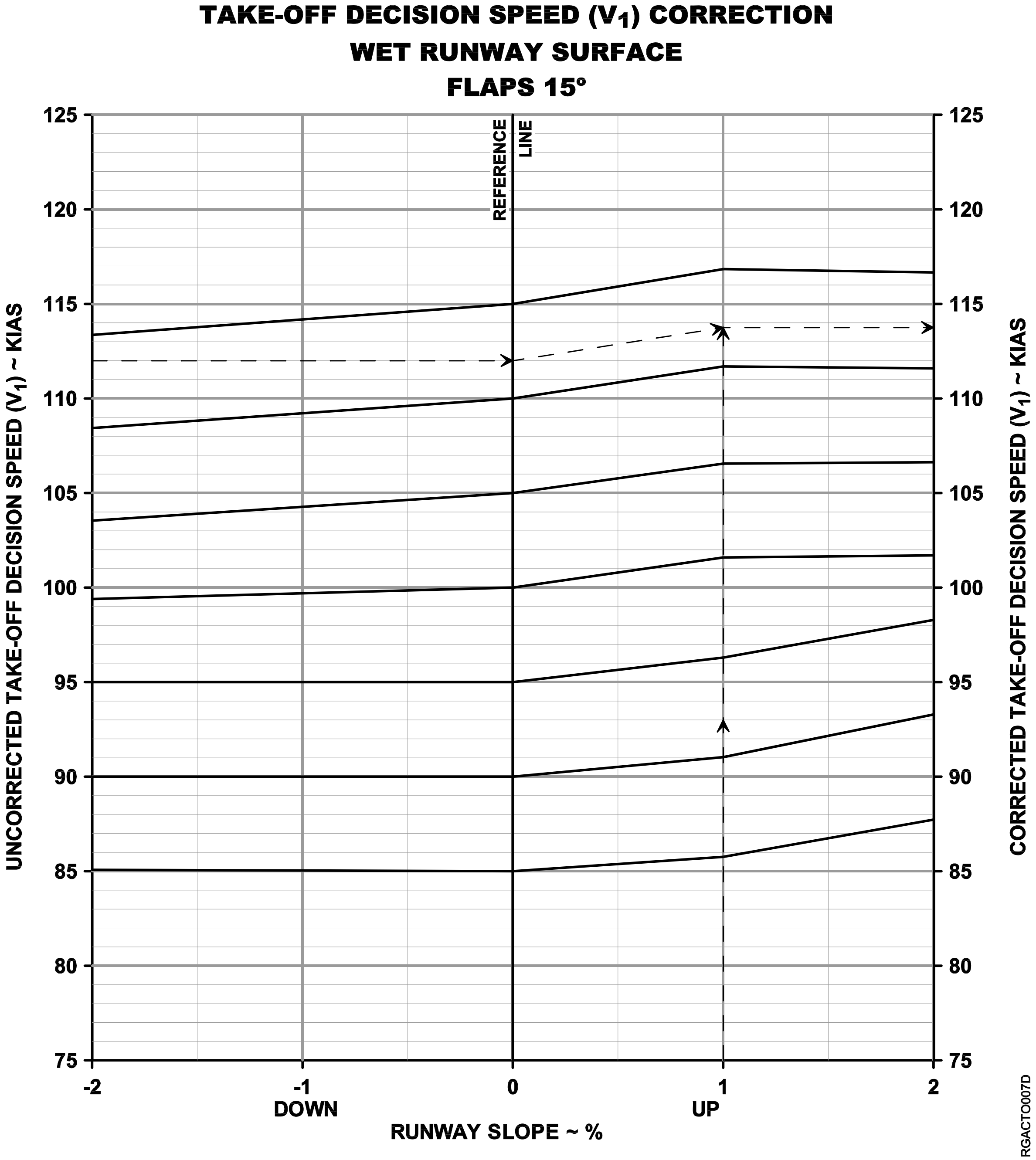
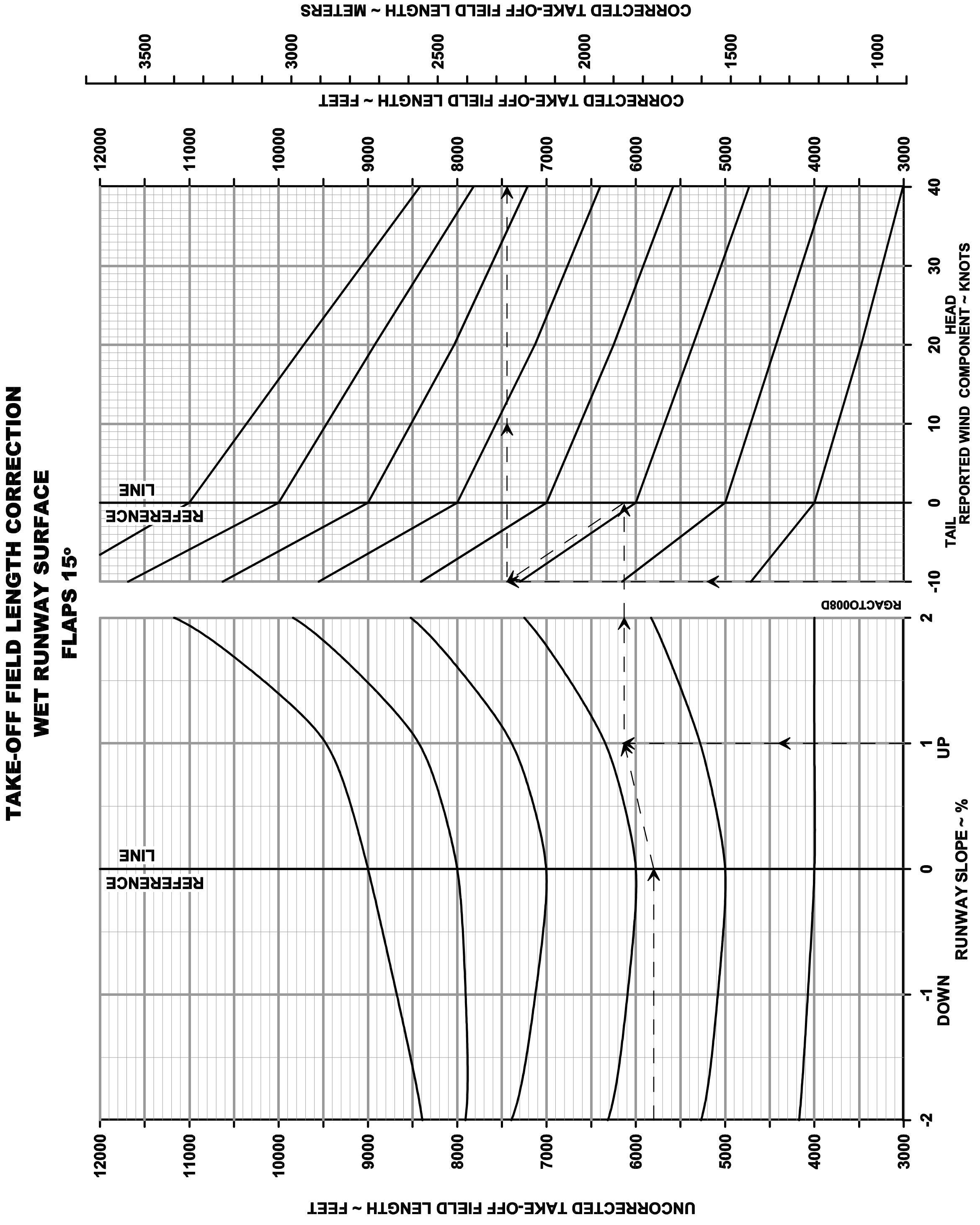


Take-Off Decision Speed (V_1) - Wet Runway (Flaps 15°)

Corrected for Runway Gradient

Figure 1



Take-Off Field Length - Wet Runway (Flaps 15°)

Corrected for Runway Gradient and Wind Component

Figure 2

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INTRODUCTION - WEIGHT, ALTITUDE and TEMPERATURE DATA

This chart contains weight, altitude and temperature (WAT) data which limit the take-off weight of the airplane, from a consideration of airworthiness climb requirements.

INSTRUCTIONS FOR USE OF WAT CHART

To Determine the WAT Limit Required

- Enter the chart from the left with field pressure altitude. Move across to the air temperature.
- From the intersection of the air temperature and field pressure altitude, move down to read the maximum allowable take-off weight, from the bottom scale.

NOTES:

1. To obtain the effect of engine antice on climb gradient, add 10^{o} C to the actual air temperature before entering the chart.
2. The maximum weight determined by other considerations such as available take-off field length must also be checked.

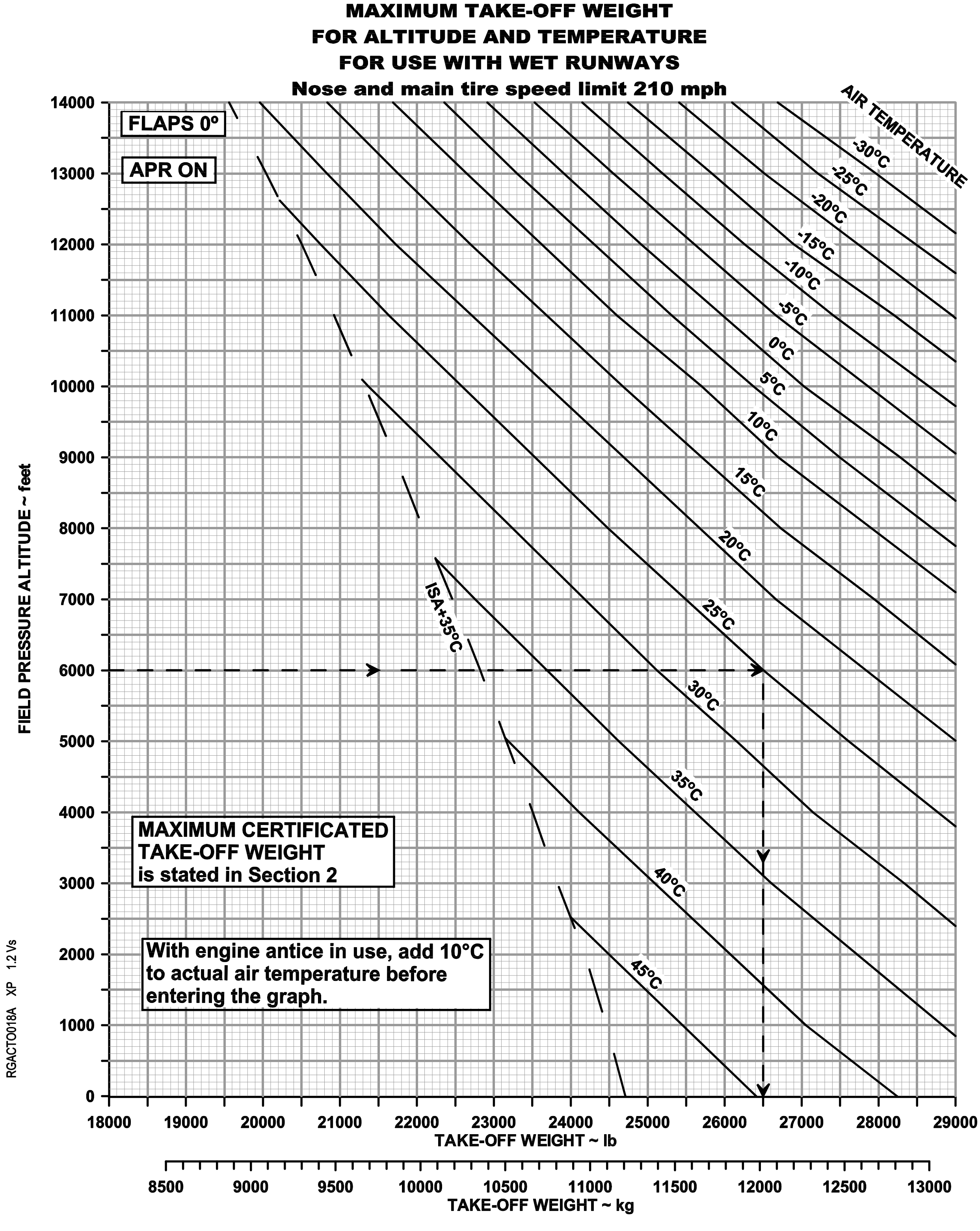

Figure 2A

Maximum Take-off Weight for Altitude and Temperature for Use with Wet Runways

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Table 16

Flaps 0° **Field Pressure Altitude (Sea Level)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	117	117	117	117	117	117	117	117	117	117	117	117	120	122	125	128	131	
	V_R ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	139	139	140	141	141	
	V_2 ~ KIAS	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	
	TOFL ~ FT	5141	5220	5305	5394	5487	5582	5680	5780	5885	5997	6092	6290	6778	7380	8066	8917	9960	
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	114	116	119	122	125	128	131
	V_R ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	136	137	138	139	139	140
	V_2 ~ KIAS	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142
	TOFL ~ FT	4829	4903	4987	5075	5164	5254	5345	5436	5528	5633	5722	5906	6357	6931	7578	8348	9287	10399
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	112	115	118	121	124	128
	V_R ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	134	135	135	136	137	138
	V_2 ~ KIAS	141	141	141	141	141	140	140	140	140	140	140	140	140	140	140	140	140	140
	TOFL ~ FT	4787	4872	4958	5045	5134	5223	5313	5404	5495	5589	5679	5800	5935	6469	7086	7784	8633	9618
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	112	111	114	117	120	123
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	131	132	132	133	134	135
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	137	137	137	137	137	137	137
	TOFL ~ FT	4743	4827	4912	4999	5087	5176	5265	5354	5444	5537	5626	5743	5813	5949	6518	7174	7916	8775
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	112	108	109	113	116	119
	V_R ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	127	127	128	129	130	131	131
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	134	134	134	134	134	134
	TOFL ~ FT	4694	4778	4862	4948	5035	5123	5211	5299	5388	5479	5567	5680	5743	5639	5951	6558	7233	7979
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	108	106	108	111	114
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	123	123	124	125	126	126	127	128
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132
	TOFL ~ FT	4643	4726	4810	4894	4980	5067	5154	5241	5329	5418	5505	5615	5671	5564	5495	5956	6583	7234
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	111	108	106	103	107	110
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120	120	121	121	122	123	124	125
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	130	129	129	129	129	129	129
	TOFL ~ FT	4592	4674	4757	4840	4925	5011	5096	5182	5269	5357	5443	5548	5598	5487	5414	5386	5948	6559
21,000 lb 9525 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	111	108	106	102	102	105
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	119	120	121
	V_2 ~ KIAS	130	130	130	130	130	130	129	129	129	129	129	129	127	126	126	126	126	126
	TOFL ~ FT	4542	4623	4705	4787	4871	4956	5040	5125	5210	5297	5381	5483	5525	5412	5334	5213	5347	5899
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	100
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	118	116	115	115	116	116	117
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	129	127	124	124	123	122	122
	TOFL ~ FT	4491	4571	4652	4734	4817	4902	4985	5068	5152	5236	5320	5417	5453	5337	5254	5129	5022	5268
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	117	116	113	112	113	113	113
	V_2 ~ KIAS	131	130	130	130	130	130	130	130	130	130	130	129	127	123	121	120	120	119
	TOFL ~ FT	4443	4522	4603	4685	4766	4849	4929	5012	5095	5178	5260	5338	5383	5264	5177	5049	4938	4813
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	118	116	113	110	109	110	110
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	130	130	128	123	120	118	117	117
	TOFL ~ FT	4397	4476	4556	4636	4716	4797	4878	4960	5041	5123	5207	5294	5317	5194	5103	4972	4856	4728
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	102	99	96
	V_R ~ KIAS	117	117	117	117	117	117	117	117	118	118	118	117	116	112	110	106	107	107
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	130	128	124	120	116	115	114
	TOFL ~ FT	4355	4433	4512	4591	4671	4751	4831	4911	4991	5071	5152	5237	5252	5128	5033	4897	4778	4646

WET RUNWAY CONDITION

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Table 17

Flaps 0° **Field Pressure Altitude (1000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**
28,000 lb **12,701 kg**	V_1 ~ KIAS	118	117	117	117	117	117	117	117	117	117	117	119	122	124	127	130	134	
	V_R ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	139	139	140	141	141	142	
	V_2 ~ KIAS	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	
	TOFL ~ FT	5353	5434	5522	5613	5711	5811	5913	6016	6129	6239	6394	6800	7376	8027	8812	9773	10986	
27,000 lb **12,247 kg**	V_1 ~ KIAS	114	114	114	114	114	114	114	114	114	114	114	116	118	121	124	127	130	
	V_R ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	137	138	138	139	140	
	V_2 ~ KIAS	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	
	TOFL ~ FT	5027	5103	5186	5272	5364	5459	5554	5650	5756	5858	6003	6378	6925	7552	8256	9128	10215	
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	115	118	120	123	126	130
	V_R ~ KIAS	134	134	134	134	134	134	134	134	134	134	134	134	135	135	136	137	137	138
	V_2 ~ KIAS	141	141	141	141	141	141	140	140	140	140	140	140	140	140	140	140	140	140
	TOFL ~ FT	4953	5040	5129	5220	5312	5406	5499	5592	5688	5784	5910	6009	6461	7057	7713	8497	9465	10618
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	110	113	116	119	122	125
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	131	132	132	133	134	135	135
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	137	137	137	137	137	137	137
	TOFL ~ FT	4907	4993	5081	5172	5263	5355	5447	5540	5635	5729	5853	5945	5943	6490	7106	7801	8655	9649
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	109	112	115	118	121
	V_R ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	127	128	129	130	131	131	132
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135
	TOFL ~ FT	4855	4941	5029	5118	5209	5300	5391	5482	5575	5669	5789	5875	5761	5928	6492	7141	7881	8739
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	107	107	110	113	116
	V_R ~ KIAS	124	124	124	124	124	124	124	124	124	124	124	124	125	126	126	127	128	129
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132
	TOFL ~ FT	4802	4887	4974	5062	5152	5242	5331	5421	5513	5606	5723	5802	5685	5654	5897	6493	7166	7905
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	107	104	105	109	111
	V_R ~ KIAS	121	121	121	121	121	121	121	121	121	121	121	121	121	122	123	124	124	125
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	130	129	129	129	129	129	129
	TOFL ~ FT	4748	4833	4918	5006	5094	5183	5272	5360	5451	5541	5656	5729	5609	5573	5459	5865	6486	7139
21,000 lb **9525 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	109	106	103	101	104	107
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	118	118	118	119	120	121	122
	V_2 ~ KIAS	130	130	130	130	129	129	129	129	129	129	129	128	127	126	126	126	126	126
	TOFL ~ FT	4695	4779	4864	4950	5037	5125	5212	5300	5389	5478	5590	5656	5534	5493	5375	5280	5825	6429
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	109	106	103	100	99	102
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	117	115	115	116	116	117	118
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	129	128	125	124	123	122	122	122
	TOFL ~ FT	4642	4725	4811	4896	4982	5068	5153	5239	5327	5415	5523	5583	5459	5412	5292	5192	5206	5742
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	97	96
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	117	113	112	113	113	113	114
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	129	128	124	122	121	120	119	119
	TOFL ~ FT	4590	4673	4758	4841	4926	5011	5096	5181	5267	5353	5446	5513	5386	5335	5211	5107	5003	5099
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	97	94
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	117	113	111	109	110	110	110
	V_2 ~ KIAS	131	131	131	131	131	130	130	130	130	130	130	128	124	121	119	118	117	116
	TOFL ~ FT	4543	4625	4707	4790	4874	4958	5042	5126	5215	5304	5398	5447	5316	5260	5133	5025	4917	4802
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	100	97	94
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	117	113	110	108	107	107	107
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	129	125	121	118	115	115	113
	TOFL ~ FT	4499	4580	4661	4743	4826	4909	4992	5075	5158	5242	5341	5382	5250	5189	5059	4946	4833	4715

WET RUNWAY CONDITION

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Table 18

Flaps 0° **Field Pressure Altitude (2000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	118	118	118	117	117	117	117	117	118	118	119	121	124	126	129	133		
	V_R ~ KIAS	138	138	138	138	138	138	138	138	138	138	139	139	140	141	141	142		
	V_2 ~ KIAS	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144	144		
	TOFL ~ FT	5573	5652	5745	5843	5946	6051	6158	6267	6387	6521	6875	7399	8027	8763	9654	10767		
27,000 lb **12,247 kg**	V_1 ~ KIAS	114	114	114	114	114	114	114	114	114	114	115	118	121	123	126	129	132	
	V_R ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	137	138	138	139	140	140	
	V_2 ~ KIAS	142	143	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142	
	TOFL ~ FT	5233	5307	5395	5488	5584	5682	5783	5885	5997	6123	6450	6945	7546	8216	9029	10029	11281	
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	114	117	120	122	125	129	
	V_R ~ KIAS	134	134	134	134	134	134	134	134	134	134	134	135	135	136	137	137	138	
	V_2 ~ KIAS	141	141	141	141	141	141	141	141	140	140	140	140	140	140	140	140	140	
	TOFL ~ FT	5128	5218	5311	5407	5503	5599	5697	5795	5896	6013	6203	6481	7049	7685	8414	9309	10416	
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	110	112	115	118	121	124	127
	V_R ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	132	132	133	134	134	135	136
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138
	TOFL ~ FT	5079	5168	5262	5356	5451	5547	5643	5740	5839	5955	6137	6018	6482	7077	7741	8530	9490	10634
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	110	108	111	114	117	120	123
	V_R ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	128	129	130	131	131	132	133
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135
	TOFL ~ FT	5026	5114	5207	5300	5394	5488	5584	5679	5777	5890	6065	5944	5925	6463	7083	7776	8616	9589
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	110	108	106	109	112	115	118
	V_R ~ KIAS	124	124	124	124	124	124	124	124	124	124	124	125	125	126	127	128	129	129
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132	132
	TOFL ~ FT	4970	5057	5149	5241	5334	5427	5521	5616	5712	5823	5989	5867	5825	5874	6435	7081	7804	8639
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	110	108	105	104	107	110	113
	V_R ~ KIAS	121	121	121	121	121	121	121	121	121	121	121	121	122	123	123	124	125	126
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130	129	129	129	129	129	129	129
	TOFL ~ FT	4913	5000	5090	5182	5273	5365	5458	5551	5646	5755	5913	5789	5742	5640	5815	6402	7061	7775
21,000 lb **9525 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	110	107	105	102	103	106	108
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	118	119	119	120	121	121	122
	V_2 ~ KIAS	129	129	129	129	129	129	129	129	129	129	128	127	127	126	126	126	126	126
	TOFL ~ FT	4857	4944	5033	5123	5214	5305	5396	5488	5581	5688	5839	5713	5661	5555	5449	5749	6350	6987
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	113	110	107	104	102	99	101	104
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	115	116	116	116	117	118	118
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	129	129	129	125	124	124	123	123	123	123
	TOFL ~ FT	4799	4887	4976	5065	5154	5243	5334	5424	5516	5620	5763	5636	5579	5470	5360	5268	5666	6249
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	101	99	96	98
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	115	112	113	113	113	114	115
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	129	125	122	121	121	120	119	119
	TOFL ~ FT	4748	4833	4920	5008	5097	5185	5274	5372	5468	5571	5690	5561	5501	5388	5275	5178	5091	5545
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	101	98	96	93
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	114	112	109	110	110	110	111
	V_2 ~ KIAS	131	131	131	130	130	130	130	130	130	130	130	125	122	119	118	117	117	116
	TOFL ~ FT	4698	4782	4868	4955	5042	5129	5218	5307	5394	5493	5622	5490	5425	5309	5192	5090	4999	4908
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	101	98	96	93
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	118	118	114	112	109	107	107	107	107
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	130	130	126	123	119	116	115	114	113
	TOFL ~ FT	4650	4734	4820	4905	4991	5077	5164	5250	5337	5434	5554	5422	5352	5234	5113	5007	4910	4805

WET RUNWAY CONDITION

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Table 19

Flaps 0° **Field Pressure Altitude (3000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**
28,000 lb **12,701 kg**	V$_1$ ~ KIAS V$_R$ ~ KIAS V$_2$ ~ KIAS TOFL ~ FT	118 138 144 5784	118 138 144 5880	118 138 144 5981	118 138 144 6086	118 138 144 6194	118 138 144 6306	118 138 144 6419	118 138 144 6540	118 138 144 6674	119 139 144 6999	121 139 144 7496	123 140 144 8055	126 141 144 8750	129 141 144 9587	131 142 144 10609			
27,000 lb **12,247 kg**	V$_1$ ~ KIAS V$_R$ ~ KIAS V$_2$ ~ KIAS TOFL ~ FT	114 136 143 5431	114 136 143 5521	114 136 143 5616	114 136 143 5714	114 136 143 5816	114 136 142 5921	114 136 142 6027	114 136 142 6141	114 136 142 6266	115 137 142 6567	118 137 142 7036	120 138 142 7570	122 138 142 8206	125 139 142 8976	128 140 142 9898	131 140 142 11063		
26,000 lb **11,793 kg**	V$_1$ ~ KIAS V$_R$ ~ KIAS V$_2$ ~ KIAS TOFL ~ FT	113 134 141 5304	113 134 141 5402	113 134 141 5501	113 134 141 5600	113 134 141 5701	113 134 141 5803	113 134 141 5904	113 134 141 6007	113 134 141 6124	113 134 140 6312	114 135 140 6568	116 135 140 7070	119 136 140 7681	122 137 140 8369	124 137 140 9203	128 138 140 10236	131 138 140 11538	
25,000 lb **11,340 kg**	V$_1$ ~ KIAS V$_R$ ~ KIAS V$_2$ ~ KIAS TOFL ~ FT	113 131 138 5253	113 131 138 5350	113 131 138 5448	113 131 138 5547	113 131 138 5647	113 131 138 5747	113 131 138 5847	113 131 138 5949	113 131 138 6064	113 131 138 6245	111 132 138 6166	112 132 138 6503	115 133 138 7072	117 134 138 7712	120 134 138 8444	123 135 138 9348	126 136 138 10464	
24,000 lb **10,886 kg**	V$_1$ ~ KIAS V$_R$ ~ KIAS V$_2$ ~ KIAS TOFL ~ FT	113 127 135 5197	113 127 135 5294	113 127 135 5391	113 127 135 5488	113 127 135 5587	113 127 135 5686	113 127 135 5784	113 127 135 5886	113 127 135 5998	113 128 135 6172	111 128 135 6091	108 129 135 6050	110 130 135 6458	113 130 135 7054	116 131 135 7717	119 132 135 8504	122 133 135 9461	
23,000 lb **10,433 kg**	V$_1$ ~ KIAS V$_R$ ~ KIAS V$_2$ ~ KIAS TOFL ~ FT	113 124 133 5139	113 124 133 5234	113 124 133 5330	113 124 133 5427	113 124 133 5524	113 124 133 5622	113 124 133 5719	113 124 133 5818	113 124 133 5929	113 124 133 6096	110 125 132 6012	108 125 132 5968	106 126 132 5904	108 127 132 6406	111 128 132 7021	114 128 132 7710	117 129 132 8542	
22,000 lb **9979 kg**	V$_1$ ~ KIAS V$_R$ ~ KIAS V$_2$ ~ KIAS TOFL ~ FT	113 121 131 5080	113 121 131 5174	113 121 131 5269	113 121 131 5364	113 121 131 5460	113 121 131 5557	113 121 131 5653	113 121 131 5751	113 121 131 5859	113 121 130 6018	110 122 130 5933	108 122 129 5885	106 123 129 5817	104 123 129 5791	106 124 129 6344	109 125 129 6985	112 126 129 7696	
21,000 lb **9525 kg**	V$_1$ ~ KIAS V$_R$ ~ KIAS V$_2$ ~ KIAS TOFL ~ FT	113 118 129 5022	113 118 129 5115	113 118 129 5209	113 118 129 5303	113 118 129 5398	113 118 129 5493	113 118 129 5587	113 118 129 5684	113 118 129 5790	113 118 128 5943	110 118 127 5855	108 119 127 5803	106 119 126 5731	103 120 126 5615	102 120 126 5698	105 121 126 6274	107 122 126 6925	
20,000 lb **9072 kg**	V$_1$ ~ KIAS V$_R$ ~ KIAS V$_2$ ~ KIAS TOFL ~ FT	112 118 130 4964	112 118 130 5057	112 118 130 5149	112 118 130 5241	112 118 130 5335	112 118 129 5428	112 118 129 5522	112 118 129 5617	112 118 129 5721	113 118 129 5866	110 115 125 5776	108 116 125 5721	105 116 124 5645	103 116 123 5526	100 117 123 5431	99 117 123 5600	103 118 123 6185	
19,000 lb **8618 kg**	V$_1$ ~ KIAS V$_R$ ~ KIAS V$_2$ ~ KIAS TOFL ~ FT	112 118 130 4908	112 118 130 4999	112 118 130 5091	112 118 130 5182	112 118 130 5277	112 118 130 5370	112 118 130 5463	112 118 130 5557	112 118 130 5654	112 118 129 5792	110 115 126 5700	108 113 123 5641	105 113 122 5561	102 113 121 5439	100 113 120 5341	97 114 119 5248	97 114 119 5488	
18,000 lb **8165 kg**	V$_1$ ~ KIAS V$_R$ ~ KIAS V$_2$ ~ KIAS TOFL ~ FT	112 118 130 4855	112 118 130 4945	112 118 130 5036	112 118 130 5127	112 118 130 5219	112 118 130 5310	112 118 130 5399	112 118 130 5491	112 118 130 5591	112 118 129 5721	110 115 126 5627	108 112 123 5565	105 110 120 5481	102 110 119 5356	100 110 118 5253	97 111 117 5155	94 111 116 5061	
17,000 lb **7711 kg**	V$_1$ ~ KIAS V$_R$ ~ KIAS V$_2$ ~ KIAS TOFL ~ FT	112 118 131 4806	112 118 131 4895	112 118 131 4984	112 118 131 5073	112 118 131 5163	112 118 131 5253	112 118 130 5342	112 118 130 5432	112 118 130 5531	112 118 130 5654	110 115 126 5558	107 112 123 5492	105 110 120 5404	102 107 117 5276	99 107 116 5169	97 108 115 5067	94 107 113 4967	

WET RUNWAY CONDITION

RGACTO001C

Table 20

Flaps 0° **Field Pressure Altitude (4000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	118	118	118	118	118	118	118	118	119	121	123	125	128	131	134			
	V_R ~ KIAS	139	139	139	139	139	139	139	139	139	140	140	141	141	142	142			
	V_2 ~ KIAS	145	145	144	144	144	144	144	144	144	144	144	144	144	144	144			
	TOFL ~ FT	6013	6130	6240	6354	6473	6582	6697	6837	7154	7628	8167	8775	9572	10535	11722			
27,000 lb **12,247 kg**	V_1 ~ KIAS	115	115	115	115	115	115	115	115	116	118	120	122	124	127	130			
	V_R ~ KIAS	136	136	136	136	136	136	136	136	137	137	138	138	139	140	140			
	V_2 ~ KIAS	143	143	143	143	143	143	143	142	142	142	142	142	142	142	142			
	TOFL ~ FT	5645	5755	5859	5966	6077	6179	6286	6418	6712	7160	7676	8245	8969	9840	10906			
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	114	116	118	121	124	127	130		
	V_R ~ KIAS	134	134	134	134	134	134	134	134	134	135	135	136	137	137	138	138		
	V_2 ~ KIAS	141	141	141	141	141	141	141	141	140	140	140	140	140	140	140	140		
	TOFL ~ FT	5493	5600	5705	5811	5917	6017	6121	6239	6428	6684	7168	7711	8365	9159	10109	11300		
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	112	114	117	119	122	125	129	
	V_R ~ KIAS	131	131	131	131	131	131	131	131	131	132	132	133	134	134	135	136	136	
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	
	TOFL ~ FT	5440	5546	5650	5754	5859	5959	6061	6177	6360	6324	6597	7098	7716	8412	9251	10282	11579	
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	109	110	112	115	118	121	124	
	V_R ~ KIAS	127	127	127	127	127	127	127	127	128	128	129	130	130	131	132	132	133	
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	
	TOFL ~ FT	5382	5486	5589	5692	5796	5895	5996	6110	6286	6246	6183	6486	7055	7699	8429	9320	10418	
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	109	106	108	110	113	116	119	
	V_R ~ KIAS	124	124	124	124	124	124	124	124	125	125	126	126	127	128	128	129	130	
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132	132	
	TOFL ~ FT	5321	5424	5525	5627	5729	5827	5927	6039	6208	6165	6099	6067	6407	7001	7662	8432	9365	
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	108	106	104	106	109	111	114	
	V_R ~ KIAS	121	121	121	121	121	121	121	121	121	122	122	123	123	124	125	126	126	
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	129	129	129	129	129	129	129	
	TOFL ~ FT	5260	5361	5461	5561	5662	5759	5857	5967	6130	6084	6015	5979	5884	6323	6932	7612	8411	
21,000 lb **9525 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	108	106	104	101	104	106	109	
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	119	119	119	120	120	121	122	123	
	V_2 ~ KIAS	129	129	129	129	129	129	129	129	128	128	127	127	126	126	126	126	126	
	TOFL ~ FT	5199	5299	5398	5496	5596	5692	5789	5896	6052	6003	5931	5892	5794	5698	6221	6846	7531	
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	113	110	108	106	103	101	98	101	104	
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	116	116	116	116	116	117	118	119	
	V_2 ~ KIAS	130	130	129	129	129	129	129	129	129	126	125	124	124	123	123	123	123	
	TOFL ~ FT	5138	5236	5334	5431	5529	5624	5719	5825	5974	5922	5848	5804	5703	5603	5556	6108	6738	
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	101	98	96	99	
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	116	113	113	113	113	114	114	115	
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	129	126	123	122	121	121	120	120	120	
	TOFL ~ FT	5080	5177	5274	5369	5465	5559	5653	5756	5899	5844	5767	5720	5615	5512	5412	5425	5981	
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	101	98	95	94	
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	115	113	111	110	110	111	111	111	
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	129	127	123	121	119	118	117	117	116	
	TOFL ~ FT	5025	5120	5216	5309	5405	5496	5590	5691	5826	5769	5690	5638	5530	5423	5319	5224	5286	
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	103	100	98	95	92	
	V_R ~ KIAS	118	118	118	118	118	118	118	118	118	115	113	110	108	107	108	107	107	
	V_2 ~ KIAS	131	131	131	130	130	130	130	130	130	127	124	121	118	116	115	114	113	
	TOFL ~ FT	4972	5066	5160	5253	5347	5438	5530	5629	5757	5698	5616	5561	5449	5339	5230	5130	5023	

WET RUNWAY CONDITION

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Table 21

Flaps 0° **Field Pressure Altitude (5000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	119	119	119	119	119	118	119	120	121	123	125	127	130	133				
	V_R ~ KIAS	139	139	139	139	139	139	139	139	140	140	141	141	142	142				
	V_2 ~ KIAS	145	145	145	145	145	145	145	145	145	145	145	145	145	145				
	TOFL ~ FT	6263	6402	6515	6651	6753	6862	7023	7359	7802	8326	8905	9594	10509	11616				
27,000 lb **12,247 kg**	V_1 ~ KIAS	115	115	115	115	115	115	115	116	118	120	122	124	127	129	133			
	V_R ~ KIAS	137	137	137	137	137	137	137	137	138	138	139	139	140	140	141			
	V_2 ~ KIAS	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143			
	TOFL ~ FT	5878	6009	6115	6243	6338	6437	6590	6906	7324	7826	8369	8995	9826	10822	12067			
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	112	114	116	118	120	123	126	129			
	V_R ~ KIAS	134	134	134	134	134	134	134	135	135	136	136	137	137	138	138			
	V_2 ~ KIAS	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141			
	TOFL ~ FT	5694	5809	5917	6031	6134	6238	6374	6468	6834	7308	7827	8393	9153	10044	11148			
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	112	114	116	119	121	124	127		
	V_R ~ KIAS	131	131	131	131	131	131	131	131	132	133	133	134	134	135	136	136		
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138		
	TOFL ~ FT	5639	5752	5860	5972	6074	6177	6310	6400	6388	6727	7206	7747	8412	9207	10167	11357		
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	109	109	112	114	117	120	123	126	
	V_R ~ KIAS	128	128	128	128	128	128	128	128	129	129	130	130	131	132	132	133	133	
	V_2 ~ KIAS	136	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	135	
	TOFL ~ FT	5579	5690	5796	5906	6008	6111	6241	6326	6311	6308	6587	7082	7706	8398	9238	10256	11534	
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	109	107	107	110	112	115	118	121	
	V_R ~ KIAS	124	124	124	124	124	124	124	125	125	126	126	127	128	128	129	130	130	
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	132	132	132	132	132	132	132	132	132	
	TOFL ~ FT	5515	5625	5729	5838	5939	6040	6168	6249	6230	6223	6210	6435	7004	7643	8368	9243	10316	
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	108	107	104	105	108	110	113	116	
	V_R ~ KIAS	121	121	121	121	121	121	121	122	122	122	123	123	124	125	126	126	127	
	V_2 ~ KIAS	131	131	131	131	131	131	131	130	130	130	129	129	129	129	129	129	129	
	TOFL ~ FT	5451	5559	5662	5769	5869	5969	6094	6171	6148	6137	6120	6045	6326	6911	7569	8318	9225	
21,000 lb **9525 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	108	107	104	102	103	106	108	111	
	V_R ~ KIAS	118	118	118	118	118	118	118	118	119	119	119	119	120	121	122	123	123	
	V_2 ~ KIAS	129	129	129	129	129	129	129	128	128	127	127	126	126	126	126	126	126	
	TOFL ~ FT	5388	5494	5596	5701	5800	5899	6022	6094	6068	6053	6032	5954	5875	6201	6801	7467	8236	
20,000 lb **9072 kg**	V_1 ~ KIAS	112	113	112	113	112	112	112	112	110	108	106	104	102	99	100	103	106	
	V_R ~ KIAS	118	118	118	118	118	118	118	117	115	116	116	116	117	117	118	119	119	
	V_2 ~ KIAS	129	129	129	129	129	129	129	128	125	125	125	124	123	123	123	123	123	
	TOFL ~ FT	5324	5428	5529	5633	5730	5828	5948	6016	5987	5968	5943	5862	5779	5686	6065	6672	7338	
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	110	108	106	104	102	99	96	98	101	
	V_R ~ KIAS	118	118	118	118	118	118	118	117	115	113	113	113	114	114	114	115	116	
	V_2 ~ KIAS	130	130	130	130	130	130	129	128	126	123	122	122	121	120	120	120	120	
	TOFL ~ FT	5272	5370	5469	5567	5663	5761	5878	5941	5909	5887	5858	5774	5686	5590	5497	5919	6529	
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	111	110	108	106	104	101	99	96	93	96	
	V_R ~ KIAS	118	118	118	118	118	118	118	117	115	113	111	110	110	111	111	111	112	
	V_2 ~ KIAS	130	130	130	130	130	130	129	129	126	123	121	119	119	118	117	117	116	
	TOFL ~ FT	5208	5306	5404	5504	5600	5696	5795	5870	5835	5808	5776	5689	5597	5497	5399	5303	5766	
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	101	99	96	93	90	
	V_R ~ KIAS	118	118	118	118	118	118	117	117	115	113	111	108	107	108	108	107	108	
	V_2 ~ KIAS	131	130	130	130	130	130	130	129	126	124	121	118	116	116	115	113	113	
	TOFL ~ FT	5151	5250	5347	5445	5540	5635	5728	5802	5764	5733	5697	5608	5512	5407	5305	5204	5103	

WET RUNWAY CONDITION

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Table 22

Flaps 0° **Field Pressure Altitude (6000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	119	119	119	119	119	119	120	122	123	125	127	129	132					
	V_R ~ KIAS	139	139	139	139	139	139	140	140	140	141	141	142	142					
	V_2 ~ KIAS	145	145	145	145	145	145	145	145	145	145	145	145	145					
	TOFL ~ FT	6435	6596	6756	6918	7049	7264	7612	8041	8518	9090	9751	10544	11588					
27,000 lb **12,247 kg**	V_1 ~ KIAS	115	115	115	115	115	116	117	118	120	122	124	126	129	132				
	V_R ~ KIAS	137	137	137	137	137	137	137	138	138	139	139	140	140	141				
	V_2 ~ KIAS	143	143	143	143	143	143	143	143	143	143	143	143	143	143				
	TOFL ~ FT	6039	6190	6336	6489	6614	6817	7145	7553	8009	8543	9144	9868	10808	11969				
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	115	116	118	120	122	125	128	131			
	V_R ~ KIAS	135	135	135	135	135	135	135	135	136	136	137	137	138	138	139			
	V_2 ~ KIAS	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141			
	TOFL ~ FT	5853	5986	6119	6253	6382	6508	6678	7051	7480	7990	8534	9198	10044	11075	12361			
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	112	110	112	114	116	118	121	123	126			
	V_R ~ KIAS	131	131	131	131	131	131	132	132	133	133	134	134	135	136	136			
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138			
	TOFL ~ FT	5798	5929	6060	6192	6319	6442	6483	6499	6887	7358	7880	8459	9218	10120	11229			
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	112	110	109	109	112	114	116	119	122	125		
	V_R ~ KIAS	128	128	128	128	128	128	128	129	129	130	131	131	132	132	133	133		
	V_2 ~ KIAS	136	136	136	135	135	135	135	135	135	135	135	135	135	135	135	135		
	TOFL ~ FT	5738	5866	5995	6124	6249	6370	6408	6406	6440	6727	7205	7755	8413	9211	10164	11344		
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	112	110	109	107	107	109	112	114	117	120		
	V_R ~ KIAS	125	125	125	125	125	125	125	125	126	127	127	128	128	129	130	130		
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133	133		
	TOFL ~ FT	5675	5801	5927	6054	6177	6294	6329	6324	6354	6366	6548	7047	7662	8351	9181	10182		
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	111	110	108	107	105	104	107	110	112	115		
	V_R ~ KIAS	122	122	122	122	122	122	122	122	122	123	123	124	125	125	126	127		
	V_2 ~ KIAS	131	131	131	131	131	131	131	130	130	130	130	130	130	130	130	130		
	TOFL ~ FT	5611	5734	5858	5982	6103	6217	6250	6241	6266	6274	6220	6369	6924	7561	8273	9129		
21,000 lb **9525 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	110	108	107	105	102	102	105	107	110		
	V_R ~ KIAS	118	118	118	118	118	118	119	119	119	120	120	120	121	122	122	123		
	V_2 ~ KIAS	129	129	129	129	129	128	128	128	127	127	126	126	126	126	126	126		
	TOFL ~ FT	5548	5669	5790	5912	6031	6142	6172	6160	6180	6184	6127	6051	6214	6788	7436	8163		
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	111	110	108	107	105	102	100	100	102	105		
	V_R ~ KIAS	118	118	118	118	118	118	117	116	116	117	117	117	117	118	119	119		
	V_2 ~ KIAS	129	129	129	129	129	129	127	126	125	125	124	124	123	123	123	123		
	TOFL ~ FT	5484	5602	5721	5841	5958	6066	6093	6078	6094	6093	6033	5954	5878	6054	6634	7287		
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	111	109	108	107	105	102	100	97	97	100		
	V_R ~ KIAS	118	118	118	118	118	118	117	115	113	113	114	114	114	114	115	115		
	V_2 ~ KIAS	130	130	130	129	129	129	127	125	123	122	122	121	121	120	120	120		
	TOFL ~ FT	5423	5540	5656	5773	5888	5993	6017	5999	6011	6005	5942	5861	5780	5681	5887	6477		
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	111	109	108	106	104	102	100	97	94	95		
	V_R ~ KIAS	118	118	118	118	118	117	116	114	113	111	110	111	111	111	111	112		
	V_2 ~ KIAS	130	130	130	130	129	129	128	125	123	121	119	119	118	118	117	116		
	TOFL ~ FT	5366	5479	5593	5708	5802	5895	5944	5924	5931	5921	5855	5771	5686	5583	5484	5721		
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	111	109	108	106	104	102	100	97	94	92		
	V_R ~ KIAS	118	118	118	118	118	117	116	114	113	111	109	107	108	108	108	108		
	V_2 ~ KIAS	130	130	130	130	130	130	128	126	124	122	119	117	116	115	114	113		
	TOFL ~ FT	5312	5422	5535	5642	5748	5856	5875	5857	5855	5841	5772	5685	5595	5488	5385	5294		

WET RUNWAY CONDITION

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Table 23

Flaps 0° **Field Pressure Altitude (7000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**
28,000 lb 12,701 kg	V_1 ~ KIAS	117	118	119	119	120	121	123	124	125	127	129	132	134					
	V_R ~ KIAS	139	139	139	139	140	140	140	141	141	141	142	142	143					
	V_2 ~ KIAS	145	145	145	145	145	145	145	145	145	145	145	145	145					
	TOFL ~ FT	6481	6730	7000	7283	7560	7916	8308	8771	9301	9954	10700	11615	12828					
27,000 lb 12,247 kg	V_1 ~ KIAS	113	114	115	116	117	118	119	121	122	124	126	128	131					
	V_R ~ KIAS	137	137	137	137	137	138	138	138	139	139	140	140	141					
	V_2 ~ KIAS	143	143	143	143	143	143	143	143	143	143	143	143	143					
	TOFL ~ FT	6087	6319	6567	6834	7096	7434	7807	8251	8741	9335	10017	10843	11933					
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	114	115	117	118	120	122	124	127	130				
	V_R ~ KIAS	135	135	135	135	135	135	136	136	136	137	137	138	138	139				
	V_2 ~ KIAS	142	141	141	141	141	141	141	141	141	141	141	141	141	141				
	TOFL ~ FT	6025	6183	6348	6520	6633	6948	7300	7711	8176	8713	9341	10085	11056	12264				
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	112	111	111	113	114	116	118	120	123	126	129			
	V_R ~ KIAS	131	132	132	132	132	132	133	133	133	134	134	135	136	136	136			
	V_2 ~ KIAS	139	139	138	138	138	138	138	138	138	138	138	138	138	138	138			
	TOFL ~ FT	5972	6126	6288	6455	6532	6546	6724	7102	7532	8046	8594	9265	10119	11166	12464			
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	112	111	109	108	110	112	114	116	118	121	124			
	V_R ~ KIAS	128	128	128	128	128	129	129	130	130	131	131	132	132	133	133			
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136			
	TOFL ~ FT	5914	6064	6221	6383	6457	6468	6448	6530	6888	7359	7882	8462	9220	10127	11234			
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	112	111	109	108	107	107	109	111	114	116	119	122		
	V_R ~ KIAS	125	125	125	125	125	125	126	126	127	127	128	128	129	130	130	131		
	V_2 ~ KIAS	134	134	133	133	133	133	133	133	133	133	133	133	133	133	133	133		
	TOFL ~ FT	5853	5998	6150	6308	6379	6388	6366	6442	6456	6689	7163	7711	8364	9161	10103	11268		
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	112	111	109	108	107	105	104	107	109	111	114	117		
	V_R ~ KIAS	122	122	122	122	122	122	122	123	123	124	124	125	125	126	127	127		
	V_2 ~ KIAS	132	131	131	131	131	130	130	130	130	130	130	130	130	130	130	130		
	TOFL ~ FT	5791	5932	6079	6231	6300	6307	6283	6354	6364	6351	6475	6967	7577	8260	9076	10055		
21,000 lb 9525 kg	V_1 ~ KIAS	112	113	113	113	112	110	109	108	107	105	103	102	104	107	109	112		
	V_R ~ KIAS	118	118	118	118	119	119	119	119	120	120	120	121	122	122	123	124		
	V_2 ~ KIAS	129	129	129	129	128	128	128	127	127	127	126	126	126	126	126	126		
	TOFL ~ FT	5729	5866	6009	6156	6222	6227	6201	6268	6273	6256	6193	6254	6797	7429	8116	8956		
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	113	112	110	109	108	106	105	103	100	99	102	104	107		
	V_R ~ KIAS	118	118	118	118	117	116	116	116	117	117	117	117	118	119	119	120		
	V_2 ~ KIAS	130	129	129	129	128	126	125	125	125	124	124	123	123	123	123	123		
	TOFL ~ FT	5668	5800	5938	6080	6143	6146	6120	6180	6182	6161	6095	6031	6064	6623	7261	7965		
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	110	109	108	106	105	102	100	98	96	99	102		
	V_R ~ KIAS	118	118	118	118	117	115	114	113	113	114	114	114	114	115	115	116		
	V_2 ~ KIAS	130	130	130	129	128	126	124	123	122	122	121	121	120	120	120	120		
	TOFL ~ FT	5603	5736	5870	6007	6068	6069	6041	6097	6094	6069	6000	5932	5855	5881	6444	7082		
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	111	110	108	108	106	104	102	100	98	95	94	97		
	V_R ~ KIAS	118	118	118	118	117	115	113	112	111	110	111	111	111	111	111	112		
	V_2 ~ KIAS	130	130	130	129	128	127	124	123	121	120	119	118	118	117	117	117		
	TOFL ~ FT	5554	5677	5805	5920	5996	5995	5965	6016	6009	5981	5909	5838	5755	5661	5697	6259		
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	111	110	108	107	106	104	102	100	98	95	92	91		
	V_R ~ KIAS	117	118	118	118	117	115	113	112	111	109	107	108	108	108	108	108		
	V_2 ~ KIAS	131	130	130	130	129	127	125	123	121	119	117	116	115	114	113	113		
	TOFL ~ FT	5502	5621	5745	5872	5927	5926	5913	5939	5929	5896	5822	5747	5660	5561	5465	5506		

WET RUNWAY CONDITION

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Table 24

Flaps 0° **Field Pressure Altitude (8000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	117	119	120	121	122	123	124	126	127	129	131	134						
	V_R ~ KIAS	139	139	140	140	140	141	141	141	142	142	142	143						
	V_2 ~ KIAS	145	145	145	145	145	145	145	145	145	145	145	145						
	TOFL ~ FT	6842	7144	7500	7870	8244	8646	9062	9593	10200	10937	11797	12837						
27,000 lb 12,247 kg	V_1 ~ KIAS	114	115	116	118	119	120	121	123	124	126	128	130	133					
	V_R ~ KIAS	137	137	137	138	138	138	139	139	140	140	140	141	141					
	V_2 ~ KIAS	143	143	143	143	143	143	143	143	143	143	143	143	143					
	TOFL ~ FT	6431	6711	7038	7389	7745	8131	8534	9004	9566	10240	11016	11954	13246					
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	114	115	116	118	119	120	122	124	127	129					
	V_R ~ KIAS	135	135	135	135	136	136	136	137	137	138	138	138	139					
	V_2 ~ KIAS	142	141	141	141	141	141	141	141	141	141	141	141	141					
	TOFL ~ FT	6323	6493	6637	6902	7238	7600	7976	8434	8928	9548	10251	11087	12227					
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	112	111	112	113	115	116	118	120	122	125	128				
	V_R ~ KIAS	132	132	132	132	133	133	133	134	134	135	135	136	136	137				
	V_2 ~ KIAS	139	139	138	138	139	138	138	138	138	138	138	138	138	138				
	TOFL ~ FT	6265	6431	6570	6620	6670	6999	7352	7776	8247	8788	9422	10161	11156	12394				
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	112	110	109	109	110	112	114	116	118	120	123	126			
	V_R ~ KIAS	128	128	128	129	129	130	130	130	131	131	132	132	133	133	134			
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136			
	TOFL ~ FT	6201	6361	6496	6543	6529	6557	6730	7113	7545	8060	8609	9269	10135	11197	12506			
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	111	110	109	108	107	107	109	111	113	116	118	121			
	V_R ~ KIAS	125	125	125	125	126	126	126	127	127	128	128	129	130	130	131			
	V_2 ~ KIAS	134	134	133	133	133	133	133	133	133	133	133	133	133	133	133			
	TOFL ~ FT	6133	6289	6418	6462	6447	6471	6531	6570	6859	7325	7846	8425	9178	10088	11190			
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	112	111	110	108	108	106	105	104	106	109	111	113	116			
	V_R ~ KIAS	122	122	122	122	122	123	123	123	124	124	125	125	126	127	127			
	V_2 ~ KIAS	132	131	131	131	130	130	130	130	130	130	130	130	130	130	130			
	TOFL ~ FT	6065	6215	6340	6380	6364	6386	6442	6477	6492	6622	7090	7625	8280	9076	10006			
21,000 lb 9525 kg	V_1 ~ KIAS	113	113	112	111	110	108	107	106	105	103	101	104	106	108	111			
	V_R ~ KIAS	119	119	119	119	119	119	120	120	120	121	121	122	122	123	124			
	V_2 ~ KIAS	129	129	129	128	128	128	127	127	127	127	127	127	127	127	127			
	TOFL ~ FT	5998	6143	6262	6300	6282	6301	6354	6384	6395	6348	6366	6839	7448	8125	8926			
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	111	109	108	107	106	105	103	101	99	101	104	106			
	V_R ~ KIAS	118	118	118	117	116	116	116	117	117	117	117	118	118	119	120			
	V_2 ~ KIAS	130	129	128	127	126	125	125	125	124	124	123	123	123	123	123			
	TOFL ~ FT	5930	6070	6184	6219	6199	6216	6265	6291	6297	6248	6197	6135	6637	7266	7945			
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	111	109	108	107	106	105	103	101	99	96	98	101			
	V_R ~ KIAS	118	118	118	116	114	113	113	114	114	114	114	114	115	115	116			
	V_2 ~ KIAS	130	130	129	127	125	123	123	122	122	122	121	120	120	120	120			
	TOFL ~ FT	5865	6000	6109	6141	6120	6135	6180	6202	6204	6151	6097	6031	5952	6446	7069			
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	111	109	108	107	106	104	103	101	98	96	93	96			
	V_R ~ KIAS	118	118	118	116	114	113	112	111	111	111	111	111	111	112	112			
	V_2 ~ KIAS	130	130	129	127	125	124	122	121	120	119	119	118	117	117	117			
	TOFL ~ FT	5804	5925	6038	6067	6045	6056	6098	6116	6113	6058	6000	5930	5847	5755	6243			
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	110	109	108	107	106	104	102	100	98	96	93	91			
	V_R ~ KIAS	117	118	117	116	114	113	112	110	109	108	108	108	108	108	108			
	V_2 ~ KIAS	131	130	129	128	126	124	123	121	119	117	116	116	115	114	113			
	TOFL ~ FT	5746	5859	5971	5983	5974	5982	6020	6034	6027	5968	5907	5834	5746	5649	5551			

WET RUNWAY CONDITION

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Table 25

Flaps 0° Field Pressure Altitude (9000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	119 140 145 7443	121 140 145 7798	122 140 145 8189	123 141 145 8596	124 141 145 9007	125 141 145 9448	127 142 145 9930	128 142 145 10526	130 142 145 11224	132 143 145 12063	134 143 145 13048							
27,000 lb 12,247 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	116 138 143 6989	117 138 143 7320	118 138 143 7692	120 138 143 8082	121 139 143 8475	122 139 143 8888	123 139 143 9322	125 140 143 9873	126 140 143 10510	128 141 143 11271	130 141 143 12154	133 141 143 13276						
26,000 lb 11,793 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 135 141 6658	113 135 141 6838	115 136 141 7182	116 136 141 7551	117 136 141 7922	119 137 141 8317	120 137 141 8729	121 137 141 9217	123 138 141 9801	124 138 141 10488	127 139 141 11282	129 139 141 12274	132 139 141 13631					
25,000 lb 11,340 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 132 139 6590	112 132 139 6670	111 133 139 6685	112 133 139 6955	113 133 139 7298	114 134 139 7665	116 134 139 8053	117 134 139 8513	118 135 139 9021	120 135 139 9641	122 136 139 10343	124 136 139 11210	127 137 139 12374					
24,000 lb 10,886 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 129 136 6517	112 129 136 6593	111 129 136 6606	109 130 136 6592	108 130 136 6683	110 130 136 7014	111 131 136 7367	113 131 136 7794	114 132 136 8274	116 132 136 8810	118 133 136 9439	120 133 136 10196	122 134 136 11200	125 134 136 12441				
23,000 lb 10,433 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 125 134 6440	112 126 133 6513	111 126 133 6524	109 126 133 6507	108 127 133 6588	107 127 133 6614	106 127 133 6702	108 128 133 7085	109 128 133 7521	111 129 133 8029	113 129 133 8581	115 130 133 9241	118 130 133 10106	120 131 133 11155	123 131 133 12452			
22,000 lb 9979 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 122 131 6362	112 122 131 6431	111 123 131 6440	109 123 130 6422	108 123 130 6499	107 123 130 6522	106 124 130 6541	104 124 130 6526	105 125 130 6799	107 125 130 7255	109 126 130 7767	110 126 130 8355	113 127 130 9101	115 127 130 9996	118 128 130 11072			
21,000 lb 9525 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 119 129 6285	112 119 129 6351	110 119 128 6358	109 120 128 6338	108 120 128 6412	107 120 127 6432	106 120 127 6447	104 120 127 6430	102 121 127 6431	102 121 127 6514	104 122 127 6967	106 122 127 7505	108 123 127 8165	110 124 127 8922	113 124 127 9832			
20,000 lb 9072 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	113 118 129 6208	112 117 128 6271	110 116 126 6275	109 116 126 6254	108 117 125 6323	107 117 125 6341	105 117 125 6354	104 117 124 6333	102 117 124 6330	101 117 124 6336	99 118 123 6280	101 119 123 6689	103 119 123 7287	105 120 123 7961	108 120 123 8718			
19,000 lb 8618 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 118 129 6134	112 117 128 6193	110 115 126 6195	108 113 124 6173	108 113 123 6238	107 114 123 6253	105 114 122 6263	104 114 122 6240	102 114 122 6233	101 114 121 6234	99 114 121 6175	97 115 120 6108	98 115 120 6465	100 116 120 7074	103 117 120 7744			
18,000 lb 8165 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 118 130 6063	111 117 128 6119	110 115 126 6119	108 113 124 6095	108 112 123 6157	106 111 121 6169	105 110 120 6177	104 111 120 6150	102 111 119 6139	101 111 119 6135	99 111 118 6073	96 112 118 6003	94 112 117 5933	95 112 117 6248	98 113 117 6850			
17,000 lb 7711 kg	V_1 ~ KIAS V_R ~ KIAS V_2 ~ KIAS TOFL ~ FT	112 118 130 5996	111 117 129 6049	110 115 127 6040	108 113 125 6022	107 112 123 6080	106 111 122 6090	105 110 120 6095	103 108 118 6065	102 108 117 6050	101 108 116 6041	98 108 116 5976	96 109 115 5901	94 108 114 5826	92 108 114 5733	92 109 114 6019			

WET RUNWAY CONDITION

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Table 26

Flaps 0° **Field Pressure Altitude (10,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	122	123	124	125	126	128	129	130	132	134								
	V_R ~ KIAS	141	141	141	141	142	142	142	143	143	143								
	V_2 ~ KIAS	146	146	146	146	146	146	146	146	146	146								
	TOFL ~ FT	8156	8537	8957	9394	9866	10366	10910	11594	12388	13374								
27,000 lb **12,247 kg**	V_1 ~ KIAS	118	120	121	122	123	124	125	127	128	130	133							
	V_R ~ KIAS	138	139	139	139	140	140	140	140	141	141	141							
	V_2 ~ KIAS	144	144	144	144	144	144	144	144	144	144	144							
	TOFL ~ FT	7661	8025	8427	8842	9265	9733	10224	10856	11574	12460	13513							
26,000 lb **11,793 kg**	V_1 ~ KIAS	115	116	117	118	119	121	122	123	125	127	129	131						
	V_R ~ KIAS	136	136	136	137	137	137	138	138	138	139	139	140						
	V_2 ~ KIAS	141	141	141	141	141	141	141	141	141	141	141	141						
	TOFL ~ FT	7156	7494	7875	8273	8680	9103	9554	10124	10771	11566	12499	13671						
25,000 lb **11,340 kg**	V_1 ~ KIAS	112	111	113	114	115	117	118	119	121	122	124	127	130					
	V_R ~ KIAS	133	133	133	134	134	134	135	135	136	136	136	137	137					
	V_2 ~ KIAS	139	139	139	139	139	139	139	139	139	139	139	139	139					
	TOFL ~ FT	6769	6907	7254	7622	8004	8404	8820	9319	9899	10604	11420	12428	13824					
24,000 lb **10,886 kg**	V_1 ~ KIAS	112	110	109	109	111	112	113	115	116	118	120	122	125					
	V_R ~ KIAS	129	130	130	131	131	131	131	132	132	133	133	134	134					
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	136					
	TOFL ~ FT	6689	6669	6704	6976	7323	7691	8082	8546	9047	9677	10391	11259	12442					
23,000 lb **10,433 kg**	V_1 ~ KIAS	111	110	109	108	106	107	109	110	112	113	115	117	120	123				
	V_R ~ KIAS	126	126	127	127	127	128	128	128	129	129	130	130	131	131				
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	133	133				
	TOFL ~ FT	6606	6584	6617	6676	6700	6993	7346	7773	8244	8785	9420	10173	11177	12390				
22,000 lb **9979 kg**	V_1 ~ KIAS	111	110	108	107	106	105	104	105	107	109	110	112	115	117				
	V_R ~ KIAS	123	123	123	123	124	124	124	125	125	126	126	127	127	128				
	V_2 ~ KIAS	131	131	130	130	130	130	130	130	130	130	130	130	130	130				
	TOFL ~ FT	6521	6498	6528	6584	6605	6611	6647	7028	7450	7963	8518	9169	10031	11047				
21,000 lb **9525 kg**	V_1 ~ KIAS	111	110	108	107	106	105	103	102	102	104	106	108	110	112				
	V_R ~ KIAS	120	120	120	120	120	120	121	121	122	122	123	123	124	124				
	V_2 ~ KIAS	129	128	128	128	127	127	127	127	127	127	127	127	127	127				
	TOFL ~ FT	6438	6414	6441	6494	6512	6516	6504	6543	6689	7142	7652	8233	8969	9830				
20,000 lb **9072 kg**	V_1 ~ KIAS	111	109	108	107	106	105	103	102	101	99	101	103	105	107				
	V_R ~ KIAS	117	117	117	117	117	117	117	117	118	118	119	119	120	120				
	V_2 ~ KIAS	127	126	126	125	125	125	124	124	124	124	124	124	124	124				
	TOFL ~ FT	6354	6329	6354	6403	6419	6420	6406	6440	6484	6441	6822	7348	8000	8734				
19,000 lb **8618 kg**	V_1 ~ KIAS	111	109	108	107	106	105	103	102	101	99	97	97	100	102				
	V_R ~ KIAS	116	114	113	114	114	114	114	114	115	115	115	115	116	117				
	V_2 ~ KIAS	127	125	123	123	123	122	122	122	121	121	120	120	120	120				
	TOFL ~ FT	6273	6248	6270	6315	6328	6327	6311	6341	6379	6333	6277	6522	7110	7756				
18,000 lb **8165 kg**	V_1 ~ KIAS	111	109	108	107	106	104	103	102	101	99	97	95	94	97				
	V_R ~ KIAS	116	114	113	112	111	111	111	111	112	112	112	112	112	113				
	V_2 ~ KIAS	127	125	123	122	120	120	120	119	119	118	118	117	117	117				
	TOFL ~ FT	6196	6170	6189	6231	6242	6239	6221	6245	6278	6228	6169	6109	6282	6858				
17,000 lb **7711 kg**	V_1 ~ KIAS	110	109	108	107	106	104	103	102	101	99	97	95	92	92				
	V_R ~ KIAS	116	114	113	112	110	109	108	108	108	109	109	108	108	109				
	V_2 ~ KIAS	127	125	124	122	121	119	117	117	117	116	116	115	114	114				
	TOFL ~ FT	6100	6096	6113	6152	6160	6154	6135	6155	6181	6128	6066	6002	5924	6029				

WET RUNWAY CONDITION

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Table 27

Flaps 0° **Field Pressure Altitude (11,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1 ~ KIAS	124	125	126	127	129	130	131	133	134									
	V_R ~ KIAS	141	142	142	142	142	143	143	143	143									
	V_2 ~ KIAS	146	146	146	146	146	146	146	146	146									
	TOFL ~ FT	8936	9344	9818	10323	10846	11412	12045	12836	13763									
27,000 lb 12,247 kg	V_1 ~ KIAS	121	122	123	124	125	126	128	129	131	133								
	V_R ~ KIAS	139	139	140	140	140	140	141	141	141	142								
	V_2 ~ KIAS	144	144	144	144	144	144	144	144	144	144								
	TOFL ~ FT	8407	8799	9220	9692	10178	10697	11268	11985	12821	13851								
26,000 lb 11,793 kg	V_1 ~ KIAS	117	118	119	120	122	123	124	125	127	129	131							
	V_R ~ KIAS	137	137	137	138	138	138	138	139	139	139	140							
	V_2 ~ KIAS	142	142	142	142	142	142	142	142	142	142	142							
	TOFL ~ FT	7856	8230	8639	9069	9506	9983	10506	11151	11896	12813	13927							
25,000 lb 11,340 kg	V_1 ~ KIAS	113	114	115	116	117	119	120	121	123	125	127	129						
	V_R ~ KIAS	134	134	134	135	135	135	135	136	136	137	137	137						
	V_2 ~ KIAS	139	139	139	139	139	139	139	139	139	139	139	139						
	TOFL ~ FT	7238	7581	7964	8371	8779	9205	9669	10246	10907	11704	12667	13886						
24,000 lb 10,886 kg	V_1 ~ KIAS	109	109	110	112	113	114	115	117	118	120	122	124	127					
	V_R ~ KIAS	130	131	131	131	132	132	132	133	133	133	134	134	135					
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	136	136	136					
	TOFL ~ FT	6734	6940	7287	7659	8041	8440	8862	9366	9953	10653	11480	12517	13872					
23,000 lb 10,433 kg	V_1 ~ KIAS	109	108	107	107	108	110	111	112	114	115	117	119	122	125				
	V_R ~ KIAS	127	127	127	128	128	128	129	129	130	130	130	131	131	132				
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	133	133				
	TOFL ~ FT	6647	6730	6755	6965	7309	7673	8067	8533	9036	9657	10377	11257	12393	13775				
22,000 lb 9979 kg	V_1 ~ KIAS	109	108	107	105	104	105	106	107	109	111	112	115	117	120				
	V_R ~ KIAS	123	123	124	124	124	125	125	126	126	126	127	127	128	128				
	V_2 ~ KIAS	131	130	130	130	130	130	130	130	130	130	130	130	130	130				
	TOFL ~ FT	6559	6638	6660	6682	6677	6940	7291	7718	8190	8732	9355	10114	11070	12212				
21,000 lb 9525 kg	V_1 ~ KIAS	109	108	107	105	104	103	101	102	104	106	108	110	112	114				
	V_R ~ KIAS	120	120	120	120	121	121	121	122	122	123	123	124	124	125				
	V_2 ~ KIAS	128	128	128	127	127	127	127	127	127	127	127	127	127	127				
	TOFL ~ FT	6471	6548	6567	6586	6579	6588	6612	6928	7348	7845	8402	9050	9866	10814				
20,000 lb 9072 kg	V_1 ~ KIAS	109	108	107	105	104	103	101	100	99	101	103	105	107	109				
	V_R ~ KIAS	117	117	117	117	117	118	118	118	118	119	119	120	120	121				
	V_2 ~ KIAS	126	126	125	125	125	124	124	124	124	124	124	124	124	124				
	TOFL ~ FT	6384	6457	6474	6490	6481	6487	6508	6527	6560	6995	7493	8080	8772	9574				
19,000 lb 8618 kg	V_1 ~ KIAS	108	108	106	105	104	102	101	100	99	97	97	99	102	104				
	V_R ~ KIAS	114	114	114	114	114	114	115	115	115	115	115	116	117	117				
	V_2 ~ KIAS	124	123	123	123	122	122	122	121	121	120	120	120	120	120				
	TOFL ~ FT	6300	6369	6384	6397	6386	6390	6407	6422	6424	6401	6658	7172	7797	8475				
18,000 lb 8165 kg	V_1 ~ KIAS	108	107	106	105	104	102	101	100	98	97	95	94	96	99				
	V_R ~ KIAS	113	112	111	111	111	111	111	112	112	112	112	112	113	113				
	V_2 ~ KIAS	124	123	121	120	120	120	119	119	119	118	118	117	117	117				
	TOFL ~ FT	6220	6285	6297	6308	6295	6297	6311	6321	6318	6291	6249	6348	6893	7503				
17,000 lb 7711 kg	V_1 ~ KIAS	108	107	106	105	103	102	101	100	98	97	95	93	91	93				
	V_R ~ KIAS	113	112	111	109	108	108	108	109	109	109	109	108	109	109				
	V_2 ~ KIAS	124	123	121	120	118	117	117	117	116	116	115	114	114	114				
	TOFL ~ FT	6144	6206	6215	6223	6209	6208	6219	6225	6218	6186	6140	6077	6063	6594				

WET RUNWAY CONDITION

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Table 28

Flaps 0° **Field Pressure Altitude (12,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V$_1$ ~ KIAS	126	127	128	130	131	132	133	135										
	V$_R$ ~ KIAS	142	142	143	143	143	143	143	144										
	V$_2$ ~ KIAS	146	146	146	146	146	146	146	146										
	TOFL ~ FT	9903	10380	10911	11494	12096	12752	13474	14416										
27,000 lb **12,247 kg**	V$_1$ ~ KIAS	123	124	125	126	127	129	130	132	133									
	V$_R$ ~ KIAS	140	140	140	141	141	141	141	142	142									
	V$_2$ ~ KIAS	144	144	144	144	144	144	144	144	144									
	TOFL ~ FT	9313	9747	10238	10774	11322	11919	12573	13418	14414									
26,000 lb **11,793 kg**	V$_1$ ~ KIAS	119	120	121	123	124	125	126	128	129	132								
	V$_R$ ~ KIAS	137	138	138	138	138	139	139	139	140	140								
	V$_2$ ~ KIAS	142	142	142	142	142	142	142	142	142	142								
	TOFL ~ FT	8718	9123	9563	10061	10562	11100	11688	12446	13329	14431								
25,000 lb **11,340 kg**	V$_1$ ~ KIAS	115	116	117	118	120	121	122	123	125	127	129							
	V$_R$ ~ KIAS	134	135	135	135	136	136	136	136	137	137	137							
	V$_2$ ~ KIAS	139	139	139	139	139	139	139	139	139	139	139							
	TOFL ~ FT	8035	8419	8833	9279	9724	10212	10733	11401	12173	13125	14277							
24,000 lb **10,886 kg**	V$_1$ ~ KIAS	110	112	113	114	115	116	117	119	120	122	124	127						
	V$_R$ ~ KIAS	131	131	132	132	132	133	133	133	134	134	134	135						
	V$_2$ ~ KIAS	137	137	137	137	137	137	137	137	137	137	137	137						
	TOFL ~ FT	7354	7701	8087	8506	8917	9339	9812	10403	11077	11897	12877	14110						
23,000 lb **10,433 kg**	V$_1$ ~ KIAS	107	107	108	109	111	112	113	114	116	117	119	122	124					
	V$_R$ ~ KIAS	128	128	128	129	129	129	129	130	130	131	131	131	132					
	V$_2$ ~ KIAS	134	134	134	134	134	134	134	134	134	134	134	134	134					
	TOFL ~ FT	6886	7005	7351	7732	8113	8516	8935	9446	10040	10750	11586	12623	13922					
22,000 lb **9979 kg**	V$_1$ ~ KIAS	107	106	105	105	106	107	108	110	111	113	114	117	119	122				
	V$_R$ ~ KIAS	124	124	125	125	125	126	126	126	127	127	128	128	128	129				
	V$_2$ ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	131	131	131				
	TOFL ~ FT	6790	6807	6813	6994	7335	7700	8087	8560	9066	9695	10411	11288	12370	13670				
21,000 lb **9525 kg**	V$_1$ ~ KIAS	107	106	105	103	102	102	103	105	106	108	110	111	114	116				
	V$_R$ ~ KIAS	121	121	121	121	121	122	122	122	123	123	124	124	125	125				
	V$_2$ ~ KIAS	128	128	127	127	127	127	127	127	127	127	127	127	127	127				
	TOFL ~ FT	6695	6710	6714	6720	6746	6916	7258	7684	8158	8706	9322	10067	10972	12041				
20,000 lb **9072 kg**	V$_1$ ~ KIAS	107	106	104	103	102	101	100	99	101	103	105	106	108	111				
	V$_R$ ~ KIAS	118	118	118	118	118	118	118	119	119	120	120	120	121	122				
	V$_2$ ~ KIAS	126	125	125	125	124	124	124	124	124	124	124	124	124	124				
	TOFL ~ FT	6599	6613	6614	6617	6641	6662	6682	6859	7274	7771	8321	8956	9725	10610				
19,000 lb **8618 kg**	V$_1$ ~ KIAS	107	106	104	103	102	101	99	98	97	97	99	101	103	105				
	V$_R$ ~ KIAS	114	114	115	115	115	115	115	115	115	116	116	117	117	118				
	V$_2$ ~ KIAS	123	123	123	122	122	122	121	121	121	121	121	121	121	121				
	TOFL ~ FT	6508	6519	6518	6519	6539	6558	6575	6608	6602	6900	7395	7970	8612	9364				
18,000 lb **8165 kg**	V$_1$ ~ KIAS	107	106	104	103	102	100	99	98	97	95	94	96	98	100				
	V$_R$ ~ KIAS	112	111	111	111	112	112	112	112	112	112	112	113	113	114				
	V$_2$ ~ KIAS	122	121	120	120	120	119	119	119	118	118	117	117	117	117				
	TOFL ~ FT	6420	6429	6426	6424	6442	6457	6472	6500	6489	6467	6553	7042	7633	8258				
17,000 lb **7711 kg**	V$_1$ ~ KIAS	107	105	104	103	101	100	99	98	96	95	93	91	93	95				
	V$_R$ ~ KIAS	111	110	109	108	108	109	109	109	109	109	108	109	109	110				
	V$_2$ ~ KIAS	122	120	119	117	117	117	117	116	116	115	114	114	114	114				
	TOFL ~ FT	6336	6343	6339	6334	6349	6362	6373	6396	6381	6354	6306	6246	6708	7282				

WET RUNWAY CONDITION

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Non-FAA Approved Performance Data

Table 29

Flaps 0° **Field Pressure Altitude (13,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	128	130	131	132	133	135												
	V_R ~ KIAS	143	143	143	143	144	144												
	V_2 ~ KIAS	146	146	146	146	146	146												
	TOFL ~ FT	11110	11657	12276	12965	13665	14441												
27,000 lb **12,247 kg**	V_1 ~ KIAS	125	126	127	129	130	131	132	134										
	V_R ~ KIAS	141	141	141	141	141	142	142	142										
	V_2 ~ KIAS	144	144	144	144	144	144	144	144										
	TOFL ~ FT	10429	10934	11496	12124	12760	13460	14256	15251										
26,000 lb **11,793 kg**	V_1 ~ KIAS	121	122	124	125	126	127	129	130	132									
	V_R ~ KIAS	138	138	139	139	139	139	140	140	140									
	V_2 ~ KIAS	142	142	142	142	142	142	142	142	142									
	TOFL ~ FT	9742	10209	10727	11295	11868	12499	13210	14093	15155									
25,000 lb **11,340 kg**	V_1 ~ KIAS	117	118	119	121	122	123	124	126	127	130								
	V_R ~ KIAS	135	135	136	136	136	136	137	137	137	138								
	V_2 ~ KIAS	139	139	139	139	139	139	139	139	139	139								
	TOFL ~ FT	9000	9419	9876	10393	10903	11462	12088	12861	13780	14932								
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	114	115	116	117	118	120	121	123	125	127							
	V_R ~ KIAS	132	132	132	133	133	133	134	134	134	135	135							
	V_2 ~ KIAS	137	137	137	137	137	137	137	137	137	137	137							
	TOFL ~ FT	8239	8633	9058	9518	9971	10469	11018	11692	12488	13469	14652							
23,000 lb **10,433 kg**	V_1 ~ KIAS	108	109	110	112	113	114	115	116	118	120	122	124						
	V_R ~ KIAS	128	129	129	129	130	130	130	131	131	131	132	132						
	V_2 ~ KIAS	134	134	134	134	134	134	134	134	134	134	134	134						
	TOFL ~ FT	7491	7844	8238	8669	9083	9523	10003	10596	11280	12119	13114	14348						
22,000 lb **9979 kg**	V_1 ~ KIAS	105	104	106	107	108	109	110	111	113	115	117	119	121					
	V_R ~ KIAS	125	125	125	126	126	126	127	127	127	128	128	129	129					
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	131	131					
	TOFL ~ FT	6986	7097	7448	7836	8218	8627	9061	9569	10172	10890	11732	12760	14033					
21,000 lb **9525 kg**	V_1 ~ KIAS	105	104	102	102	103	104	105	107	108	110	111	113	116					
	V_R ~ KIAS	121	121	121	122	122	122	123	123	124	124	124	125	125					
	V_2 ~ KIAS	128	127	127	127	127	127	127	127	127	127	127	127	127					
	TOFL ~ FT	6885	6901	6931	7039	7377	7742	8135	8611	9133	9751	10467	11325	12374					
20,000 lb **9072 kg**	V_1 ~ KIAS	105	103	102	101	100	99	100	102	103	105	106	108	110					
	V_R ~ KIAS	118	118	118	118	118	119	119	119	120	120	121	121	122					
	V_2 ~ KIAS	125	125	125	124	124	124	124	124	124	124	124	124	124					
	TOFL ~ FT	6783	6797	6824	6857	6881	6916	7266	7681	8152	8707	9319	10042	10914					
19,000 lb **8618 kg**	V_1 ~ KIAS	105	103	102	101	100	99	97	96	98	100	101	103	105					
	V_R ~ KIAS	115	115	115	115	115	115	115	115	116	116	117	117	118					
	V_2 ~ KIAS	123	122	122	122	122	121	121	121	121	121	121	121	121					
	TOFL ~ FT	6685	6697	6721	6750	6771	6786	6794	6829	7241	7730	8288	8901	9641					
18,000 lb **8165 kg**	V_1 ~ KIAS	104	103	102	101	100	99	97	96	95	94	96	98	100					
	V_R ~ KIAS	111	112	112	112	112	112	112	112	112	112	113	113	114					
	V_2 ~ KIAS	120	120	120	119	119	119	119	118	118	117	117	117	117					
	TOFL ~ FT	6592	6601	6622	6648	6666	6678	6682	6693	6706	6850	7326	7889	8520					
17,000 lb **7711 kg**	V_1 ~ KIAS	104	103	102	101	100	98	97	96	94	93	91	93	95					
	V_R ~ KIAS	109	108	108	109	109	109	109	109	109	109	109	110	110					
	V_2 ~ KIAS	119	118	117	117	117	116	116	116	115	114	114	114	114					
	TOFL ~ FT	6502	6510	6528	6550	6565	6574	6576	6582	6590	6561	6510	6933	7500					

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Table 30

Flaps 0° **Field Pressure Altitude (14,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1 ~ KIAS	131	132	133	134	136													
	V_R ~ KIAS	143	144	144	144	144													
	V_2 ~ KIAS	146	146	146	146	146													
	TOFL ~ FT	12504	13147	13887	14695	15531													
27,000 lb **12,247 kg**	V_1 ~ KIAS	127	128	130	131	132	134												
	V_R ~ KIAS	141	141	142	142	142	142												
	V_2 ~ KIAS	144	144	144	144	144	144												
	TOFL ~ FT	11713	12299	12971	13703	14452	15287												
26,000 lb **11,793 kg**	V_1 ~ KIAS	124	125	126	127	128	130	131											
	V_R ~ KIAS	139	139	139	140	140	140	140											
	V_2 ~ KIAS	142	142	142	142	142	142	142											
	TOFL ~ FT	10933	11463	12069	12729	13402	14142	15001											
25,000 lb **11,340 kg**	V_1 ~ KIAS	119	120	122	123	124	125	126	128	130									
	V_R ~ KIAS	136	136	136	137	137	137	137	138	138									
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140									
	TOFL ~ FT	10067	10550	11094	11677	12272	12923	13668	14581	15702									
24,000 lb **10,886 kg**	V_1 ~ KIAS	115	116	117	118	119	120	122	123	125	127								
	V_R ~ KIAS	133	133	133	133	134	134	134	134	135	135								
	V_2 ~ KIAS	137	137	137	137	137	137	137	137	137	137								
	TOFL ~ FT	9235	9665	10142	10669	11192	11763	12409	13202	14158	15341								
23,000 lb **10,433 kg**	V_1 ~ KIAS	110	111	113	114	115	116	117	118	120	122	124							
	V_R ~ KIAS	129	129	130	130	130	131	131	131	131	132	132							
	V_2 ~ KIAS	134	134	134	134	134	134	134	134	134	134	134							
	TOFL ~ FT	8398	8799	9240	9706	10165	10668	11231	11916	12735	13729	14925							
22,000 lb **9979 kg**	V_1 ~ KIAS	106	107	108	109	110	111	112	113	115	117	119	121						
	V_R ~ KIAS	125	126	126	126	127	127	127	128	128	128	129	129						
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	131						
	TOFL ~ FT	7595	7952	8357	8791	9212	9655	10142	10738	11440	12282	13279	14490						
21,000 lb **9525 kg**	V_1 ~ KIAS	103	102	103	104	105	106	107	109	110	112	113	116	118					
	V_R ~ KIAS	122	122	122	123	123	123	123	124	124	125	125	125	126					
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	128	128					
	TOFL ~ FT	7125	7156	7503	7889	8272	8683	9117	9630	10243	10957	11791	12785	14016					
20,000 lb **9072 kg**	V_1 ~ KIAS	103	102	100	99	100	101	102	104	105	107	108	110	112					
	V_R ~ KIAS	118	118	118	119	119	119	120	120	120	121	121	122	122					
	V_2 ~ KIAS	125	124	124	124	124	124	124	124	124	124	124	124	124					
	TOFL ~ FT	7015	7044	7075	7105	7384	7747	8143	8611	9142	9754	10463	11286	12287					
19,000 lb **8618 kg**	V_1 ~ KIAS	103	101	100	99	98	97	97	98	100	102	103	105	107					
	V_R ~ KIAS	115	115	115	115	115	115	116	116	116	117	117	118	118					
	V_2 ~ KIAS	122	122	122	121	121	121	121	121	121	121	121	121	121					
	TOFL ~ FT	6909	6935	6963	6989	7005	7032	7235	7650	8126	8675	9271	9982	10802					
18,000 lb **8165 kg**	V_1 ~ KIAS	102	101	100	99	98	97	96	94	95	96	98	100	102					
	V_R ~ KIAS	112	112	112	112	112	112	112	113	113	113	113	114	114					
	V_2 ~ KIAS	120	120	119	119	119	119	118	118	118	118	118	118	118					
	TOFL ~ FT	6808	6831	6856	6878	6892	6915	6936	6973	7193	7670	8219	8820	9510					
17,000 lb **7711 kg**	V_1 ~ KIAS	102	101	100	99	98	97	95	94	93	91	93	95	97					
	V_R ~ KIAS	109	109	109	109	109	109	109	109	109	109	110	110	111					
	V_2 ~ KIAS	118	117	117	117	116	116	116	115	114	114	114	114	114					
	TOFL ~ FT	6711	6732	6754	6773	6783	6803	6820	6852	6835	6799	7224	7762	8402					

WET RUNWAY CONDITION

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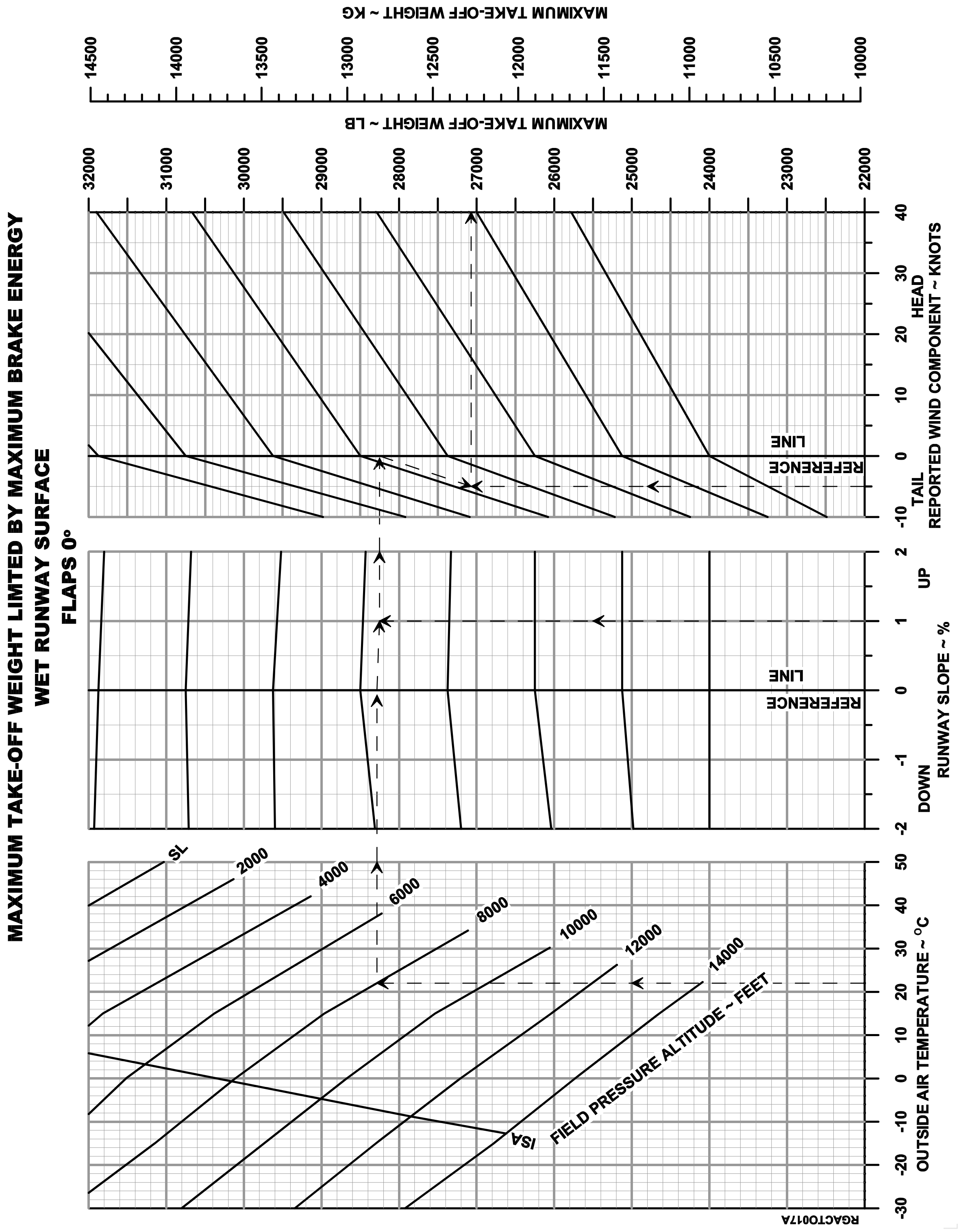
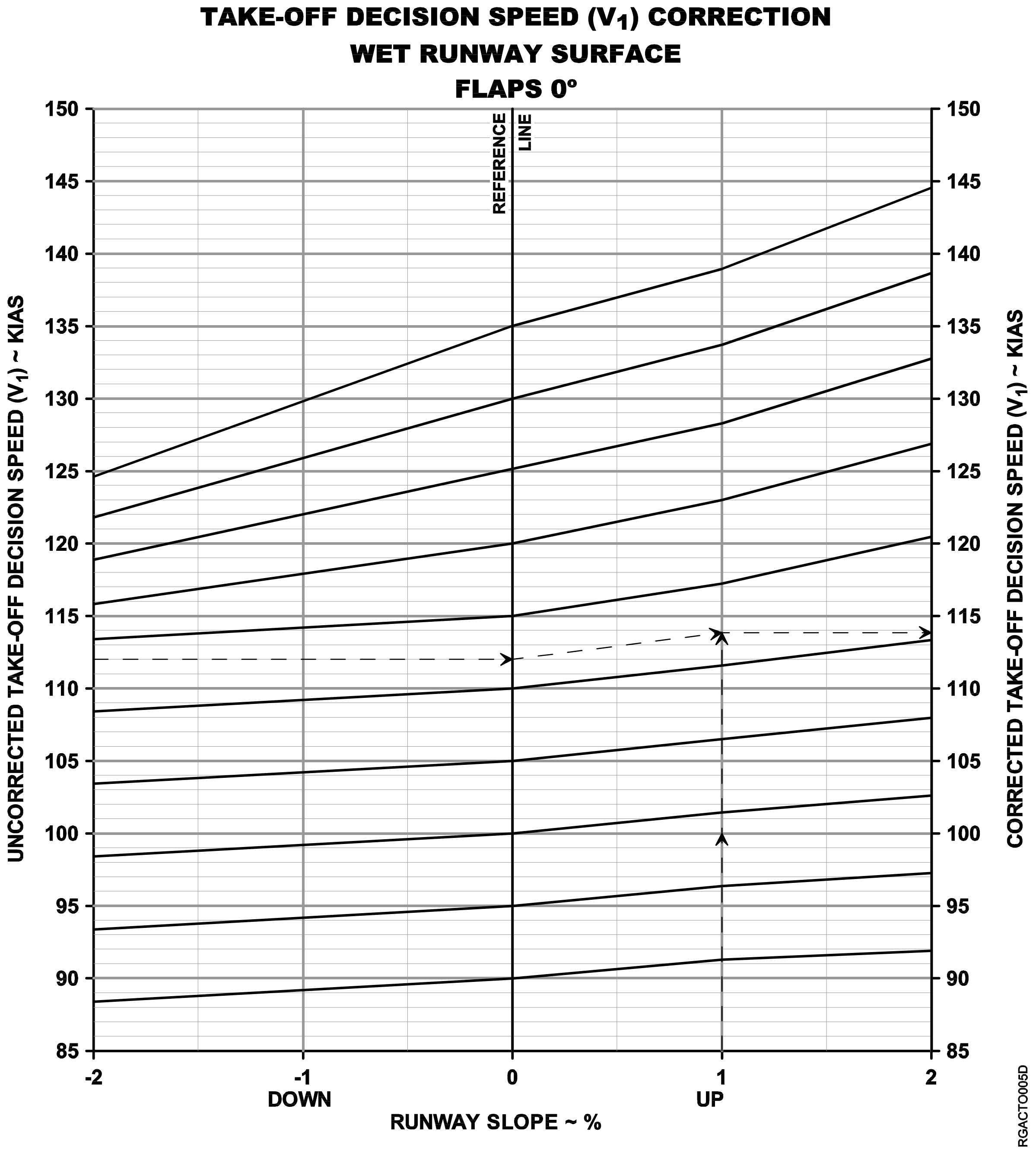
NOTE: For instructions on the use of this graph, refer to page 8.



NOTE: Check WAT limit first; the more restrictive of the WAT limit or Brake Energy limit must be used.

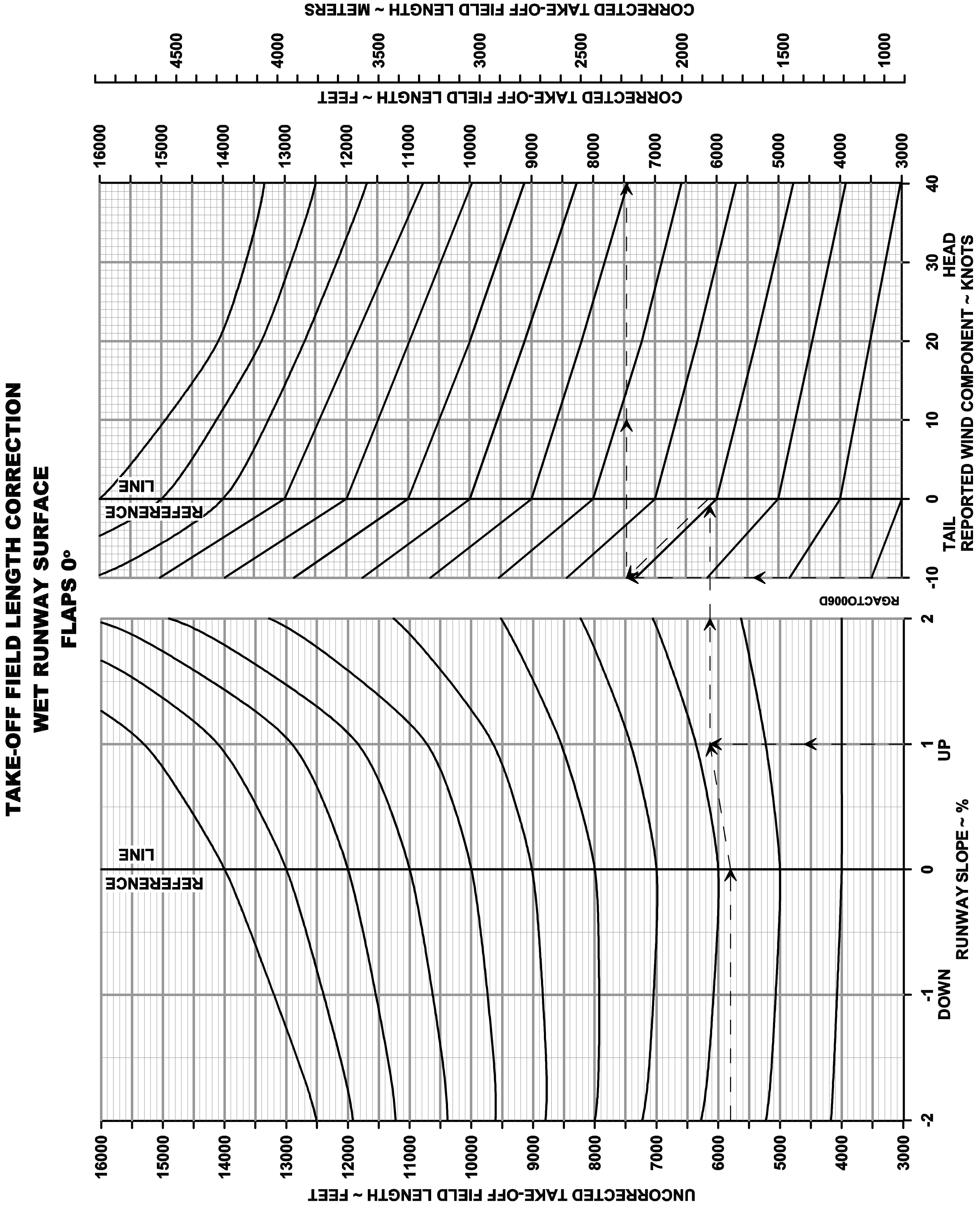
Maximum Take-Off Weight Limited by Maximum Brake Energy
Wet Runway (Flaps 0°)
Figure 3



Take-Off Decision Speed (V_1) - Wet Runway (Flaps 0°)

Corrected for Runway Gradient

Figure 4



Take-Off Field Length - Wet Runway (Flaps 0°)

Corrected for Runway Gradient and Wind Component

Figure 5

Table 31

Flaps 15° Field Pressure Altitude (Sea Level)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	132	132	132	132	132	132	132	132	132	132	132
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140
	TOFL ~ FT	5914	6016	6119	6224	6330	6436	6543	6650	6758	6867	6973
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138
	TOFL ~ FT	5907	6009	6113	6217	6322	6429	6535	6641	6749	6858	6964
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126	126
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	136	136	135
	TOFL ~ FT	5904	6006	6110	6214	6320	6425	6532	6638	6745	6853	6959
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	123
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133
	TOFL ~ FT	5879	5981	6084	6188	6292	6398	6503	6608	6715	6822	6927
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	131
	TOFL ~ FT	5847	5948	6051	6154	6258	6362	6467	6571	6677	6783	6887
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	116
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128
	TOFL ~ FT	5811	5912	6014	6116	6220	6323	6427	6530	6634	6739	6843
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_2 ~ KIAS	127	127	127	127	127	127	127	126	126	126	126
	TOFL ~ FT	5775	5876	5977	6078	6181	6284	6386	6489	6592	6695	6798
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	126	126	126	126	126
	TOFL ~ FT	5741	5841	5941	6042	6144	6246	6347	6449	6551	6653	6755
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127
	TOFL ~ FT	5706	5806	5906	6006	6107	6208	6308	6409	6510	6611	6711
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127
	TOFL ~ FT	5676	5775	5875	5974	6074	6174	6274	6373	6473	6573	6672
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	128	128	128	128	127	127	127	127	127	127	127
	TOFL ~ FT	5650	5749	5848	5947	6046	6145	6244	6343	6441	6540	6639
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	127	127
	TOFL ~ FT	5630	5729	5827	5925	6024	6122	6220	6318	6415	6513	6611

**COMPACTED SNOW
RUNWAY CONDITION**

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Table 32

Flaps 15° **Field Pressure Altitude (1000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	132	132	132	132	132	132	132	132	132	132	132
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140
	TOFL ~ FT	6111	6216	6322	6431	6541	6651	6761	6871	6984	7096	7241
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138
	TOFL ~ FT	6103	6208	6314	6423	6532	6642	6752	6862	6974	7086	7228
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126	126
	V_2 ~ KIAS	136	136	136	136	136	136	136	136	135	135	135
	TOFL ~ FT	6099	6204	6311	6419	6528	6638	6748	6857	6969	7080	7220
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	123
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133
	TOFL ~ FT	6071	6177	6283	6391	6499	6608	6717	6826	6937	7047	7184
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	131	131	130
	TOFL ~ FT	6037	6142	6248	6355	6463	6571	6679	6787	6896	7006	7140
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	116
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128
	TOFL ~ FT	5999	6104	6209	6315	6422	6529	6636	6743	6851	6960	7091
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_2 ~ KIAS	127	127	127	127	126	126	126	126	126	126	126
	TOFL ~ FT	5961	6065	6169	6275	6381	6487	6593	6699	6806	6913	7042
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	126	126	126	126	126	126	126	126
	TOFL ~ FT	5925	6028	6132	6236	6342	6447	6552	6657	6763	6869	6994
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	126	126
	TOFL ~ FT	5888	5991	6094	6198	6302	6406	6511	6614	6719	6824	6946
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127
	TOFL ~ FT	5855	5958	6060	6164	6267	6370	6474	6576	6680	6783	6903
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127
	TOFL ~ FT	5828	5930	6032	6134	6237	6339	6442	6544	6646	6748	6865
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	128	128	128	128	128	128	128	127	127	127	127
	TOFL ~ FT	5805	5907	6008	6111	6212	6314	6415	6517	6618	6719	6833

COMPACTED SNOW RUNWAY CONDITION

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Table 33

Flags 15° **Field Pressure Altitude (2000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	132	132	132	132	132	132	132	132	132	132	133
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140
	TOFL ~ FT	6318	6425	6537	6650	6764	6878	6993	7109	7226	7362	7499
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	113
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	137
	TOFL ~ FT	6309	6416	6528	6641	6755	6868	6983	7098	7215	7349	7479
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126	127
	V_2 ~ KIAS	136	136	136	136	136	135	135	135	135	135	135
	TOFL ~ FT	6303	6412	6524	6636	6750	6863	6977	7092	7208	7341	7465
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	124
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133
	TOFL ~ FT	6274	6382	6494	6606	6719	6831	6945	7058	7174	7305	7422
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	130
	TOFL ~ FT	6238	6346	6456	6568	6680	6791	6904	7017	7131	7260	7371
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	117
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128
	TOFL ~ FT	6198	6305	6415	6526	6637	6747	6859	6971	7084	7210	7315
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	112
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	114
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126
	TOFL ~ FT	6157	6264	6373	6483	6593	6703	6813	6924	7035	7160	7258
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125
	TOFL ~ FT	6118	6225	6333	6442	6551	6660	6769	6879	6989	7112	7203
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	126	126	126	126	125
	TOFL ~ FT	6079	6185	6293	6401	6509	6617	6725	6833	6942	7063	7148
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	125
	TOFL ~ FT	6044	6150	6257	6364	6471	6578	6685	6793	6900	7019	7097
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	111
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	126
	TOFL ~ FT	6014	6120	6226	6332	6439	6545	6651	6757	6863	6980	7051
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	111
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	111
	V_2 ~ KIAS	128	128	128	128	127	127	127	127	127	127	126
	TOFL ~ FT	5989	6095	6201	6306	6412	6517	6622	6727	6833	6948	7012

COMPACTED SNOW RUNWAY CONDITION

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Table 34

Flaps 15° **Field Pressure Altitude (3000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	111
	V_R ~ KIAS	132	132	132	132	132	132	132	132	133	133	133
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	139
	TOFL ~ FT	6526	6643	6761	6878	6997	7116	7235	7356	7491	7633	7592
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	111
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	137	137
	TOFL ~ FT	6516	6633	6750	6868	6986	7105	7223	7344	7478	7614	7568
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	113	110
	V_R ~ KIAS	126	126	126	126	126	126	126	126	126	127	127
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135
	TOFL ~ FT	6511	6627	6745	6862	6980	7099	7216	7337	7469	7599	7549
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	112	110
	V_R ~ KIAS	123	123	123	123	123	123	123	123	123	123	124
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	132
	TOFL ~ FT	6480	6596	6713	6830	6947	7065	7182	7301	7432	7556	7501
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	112	110
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	120
	V_2 ~ KIAS	131	131	131	131	131	131	130	130	130	130	130
	TOFL ~ FT	6442	6557	6673	6789	6906	7022	7138	7256	7386	7504	7445
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	112	110
	V_R ~ KIAS	116	116	116	116	116	116	116	116	116	116	117
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	127
	TOFL ~ FT	6400	6515	6630	6745	6860	6976	7091	7207	7335	7447	7384
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	112	110
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	114	114
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125
	TOFL ~ FT	6358	6471	6586	6699	6814	6928	7042	7158	7283	7389	7323
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	110
	V_R ~ KIAS	113	112	112	112	112	112	112	112	112	112	111
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	123
	TOFL ~ FT	6317	6430	6543	6656	6769	6883	6995	7110	7233	7334	7264
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	110
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110
	V_2 ~ KIAS	127	127	127	126	126	126	126	126	126	125	123
	TOFL ~ FT	6276	6388	6500	6612	6725	6837	6948	7061	7183	7277	7204
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	112	110
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	125	123
	TOFL ~ FT	6239	6350	6462	6573	6684	6796	6906	7018	7138	7226	7149
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	111	109
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	126	123
	TOFL ~ FT	6207	6318	6429	6539	6649	6759	6869	6979	7097	7180	7099
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	111	109
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	111	109
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	126	123
	TOFL ~ FT	6181	6291	6401	6511	6620	6729	6838	6947	7063	7140	7055

COMPACTED SNOW RUNWAY CONDITION

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Table 35

Flaps 15°   Field Pressure Altitude (4000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	110
	V_R ~ KIAS	132	132	132	132	132	133	133	133	133	133	133
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	139	139
	TOFL ~ FT	6750	6876	7000	7124	7249	7367	7489	7625	7772	7756	7930
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	109
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	137	137	137
	TOFL ~ FT	6739	6865	6988	7112	7236	7355	7476	7611	7752	7731	7677
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	113	111	109
	V_R ~ KIAS	126	126	126	126	126	126	126	127	127	127	127
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	134
	TOFL ~ FT	6732	6858	6981	7104	7228	7346	7467	7601	7737	7711	7653
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	111	108
	V_R ~ KIAS	123	123	123	123	123	123	123	123	124	124	124
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	132	132
	TOFL ~ FT	6700	6824	6947	7069	7192	7310	7430	7563	7693	7663	7600
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	110	108
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120	121
	V_2 ~ KIAS	131	131	130	130	130	130	130	130	130	130	129
	TOFL ~ FT	6660	6783	6905	7026	7148	7265	7384	7515	7640	7605	7539
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	110	108
	V_R ~ KIAS	116	116	116	116	116	116	116	116	117	117	117
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	127	126
	TOFL ~ FT	6616	6738	6858	6979	7099	7215	7334	7462	7581	7543	7473
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	113	112	110	108
	V_R ~ KIAS	113	113	113	113	113	113	113	113	114	114	115
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	124
	TOFL ~ FT	6571	6692	6811	6930	7050	7165	7282	7409	7523	7481	7406
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108
	V_R ~ KIAS	113	113	112	112	112	112	112	112	112	111	112
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	122
	TOFL ~ FT	6528	6647	6766	6884	7002	7117	7232	7358	7465	7420	7342
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	120
	TOFL ~ FT	6484	6602	6720	6837	6954	7068	7182	7306	7408	7358	7277
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	112	110	108
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108
	V_2 ~ KIAS	127	127	127	127	127	126	126	126	125	123	120
	TOFL ~ FT	6445	6562	6679	6795	6911	7023	7137	7259	7355	7302	7217
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	111	110	108
	V_R ~ KIAS	112	112	112	112	112	112	112	112	112	110	108
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	123	121
	TOFL ~ FT	6411	6527	6643	6758	6873	6984	7097	7217	7308	7251	7163
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	112	111	109	107
	V_R ~ KIAS	112	112	112	112	112	112	112	112	111	110	108
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	124	121
	TOFL ~ FT	6383	6498	6613	6727	6840	6951	7063	7181	7267	7206	7114

COMPACTED SNOW RUNWAY CONDITION

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Table 36

Flaps 15° **Field Pressure Altitude (5000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	110	112
	V_R ~ KIAS	132	133	133	133	133	133	133	133	133	133	133
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	139	139	138
	TOFL ~ FT	6991	7125	7253	7385	7507	7630	7782	7828	7840	8064	8560
27,000 lb 12,247 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	109	108
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	138	138	138	137	137	137	136
	TOFL ~ FT	6979	7113	7240	7372	7494	7616	7768	7810	7816	7837	7942
26,000 lb 11,793 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	109	107
	V_R ~ KIAS	126	126	126	127	127	127	127	127	127	127	127
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	134	134
	TOFL ~ FT	6972	7105	7232	7363	7485	7608	7758	7796	7798	7813	7748
25,000 lb 11,340 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	109	106
	V_R ~ KIAS	123	123	123	123	123	123	123	123	124	124	124
	V_2 ~ KIAS	133	133	133	133	133	133	133	132	132	132	131
	TOFL ~ FT	6939	7070	7197	7327	7448	7571	7718	7753	7750	7760	7692
24,000 lb 10,886 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	112	110	108	106
	V_R ~ KIAS	120	120	120	120	120	120	120	120	120	121	121
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	129	129
	TOFL ~ FT	6897	7027	7153	7281	7402	7524	7669	7700	7693	7699	7626
23,000 lb 10,433 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	111	110	108	106
	V_R ~ KIAS	116	116	116	116	116	116	116	116	117	117	117
	V_2 ~ KIAS	128	128	128	128	128	128	128	127	127	126	126
	TOFL ~ FT	6851	6980	7104	7231	7352	7472	7615	7643	7632	7632	7556
22,000 lb 9979 kg	V_1 ~ KIAS	113	113	113	113	113	113	113	111	110	108	106
	V_R ~ KIAS	113	113	113	113	113	113	113	114	114	115	115
	V_2 ~ KIAS	126	126	126	126	126	126	126	125	125	125	124
	TOFL ~ FT	6805	6931	7055	7180	7300	7420	7561	7585	7569	7565	7486
21,000 lb 9525 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	111	110	108	106
	V_R ~ KIAS	113	113	113	113	112	112	112	111	111	112	112
	V_2 ~ KIAS	126	126	126	126	126	126	126	124	123	122	122
	TOFL ~ FT	6760	6885	7008	7131	7250	7370	7508	7529	7509	7500	7418
20,000 lb 9072 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	111	109	108	106
	V_R ~ KIAS	112	112	112	112	112	112	112	111	110	108	109
	V_2 ~ KIAS	126	126	126	126	126	126	126	124	122	120	120
	TOFL ~ FT	6715	6838	6960	7082	7201	7319	7455	7473	7449	7435	7349
19,000 lb 8618 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	111	109	108	106
	V_R ~ KIAS	112	112	112	112	112	112	112	111	109	108	106
	V_2 ~ KIAS	127	126	126	126	126	126	126	125	123	120	118
	TOFL ~ FT	6675	6796	6917	7038	7155	7273	7407	7422	7393	7375	7286
18,000 lb 8165 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	111	109	108	106
	V_R ~ KIAS	112	112	112	112	112	112	112	111	109	108	106
	V_2 ~ KIAS	127	127	127	127	127	127	126	125	123	121	118
	TOFL ~ FT	6639	6759	6879	6999	7116	7233	7364	7376	7344	7320	7228
17,000 lb 7711 kg	V_1 ~ KIAS	112	112	112	112	112	112	112	110	109	108	106
	V_R ~ KIAS	112	112	112	112	112	112	112	111	109	108	106
	V_2 ~ KIAS	127	127	127	127	127	127	127	125	123	121	118
	TOFL ~ FT	6610	6729	6848	6966	7082	7199	7328	7337	7300	7272	7177

**COMPACTED SNOW
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Table 37

Flaps 15° **Field Pressure Altitude (6000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	113	113	113	113	111	110	110	112	114
	V_R ~ KIAS	133	133	133	133	133	133	133	133	133	133	133
	V_2 ~ KIAS	140	140	140	140	140	140	139	139	139	138	138
	TOFL ~ FT	7186	7340	7495	7649	7799	7883	7924	7965	8234	8720	9241
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	110	109	108	110
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	130
	V_2 ~ KIAS	138	138	138	138	138	137	137	137	137	136	136
	TOFL ~ FT	7178	7330	7483	7636	7785	7867	7905	7941	8006	8092	8583
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	110	109	107	105
	V_R ~ KIAS	126	126	127	127	127	127	127	127	127	127	127
	V_2 ~ KIAS	135	135	135	135	135	135	135	134	134	134	133
	TOFL ~ FT	7174	7325	7476	7628	7776	7857	7891	7923	7982	7933	7934
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	110	109	107	105
	V_R ~ KIAS	123	123	123	123	123	123	123	124	124	124	124
	V_2 ~ KIAS	133	133	133	133	133	133	132	132	132	131	131
	TOFL ~ FT	7142	7291	7441	7590	7737	7816	7847	7875	7928	7876	7803
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	110	109	107	105
	V_R ~ KIAS	120	120	120	120	120	120	120	120	121	121	121
	V_2 ~ KIAS	130	130	130	130	130	130	130	129	129	129	128
	TOFL ~ FT	7101	7248	7396	7544	7688	7765	7794	7817	7865	7809	7733
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	110	108	107	104
	V_R ~ KIAS	116	116	116	116	116	116	117	117	117	118	118
	V_2 ~ KIAS	128	128	128	128	128	128	127	127	126	126	125
	TOFL ~ FT	7057	7201	7347	7492	7635	7710	7736	7756	7798	7738	7658
22,000 lb **9979 kg**	V_1 ~ KIAS	113	113	113	113	113	112	111	109	108	106	104
	V_R ~ KIAS	113	113	113	113	113	113	114	114	115	115	115
	V_2 ~ KIAS	126	126	126	126	126	126	125	125	125	124	123
	TOFL ~ FT	7011	7153	7297	7440	7581	7655	7678	7693	7730	7667	7584
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	112	112	112	111	109	108	106	104
	V_R ~ KIAS	112	112	112	113	112	112	111	111	112	112	112
	V_2 ~ KIAS	126	126	126	126	126	125	123	123	122	122	121
	TOFL ~ FT	6967	7107	7249	7390	7529	7601	7621	7632	7664	7597	7511
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	112	112	112	112	110	109	108	106	104
	V_R ~ KIAS	112	112	112	112	112	112	111	109	108	109	109
	V_2 ~ KIAS	126	126	126	126	126	125	124	122	120	120	119
	TOFL ~ FT	6923	7061	7200	7339	7477	7547	7564	7572	7598	7528	7438
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	112	112	112	111	110	109	108	106	104
	V_R ~ KIAS	112	112	112	112	112	112	110	109	108	106	106
	V_2 ~ KIAS	127	126	126	126	126	125	124	122	120	118	117
	TOFL ~ FT	6884	7020	7157	7294	7430	7498	7513	7516	7537	7464	7371
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	112	112	112	111	110	109	108	106	104
	V_R ~ KIAS	112	112	112	112	112	111	110	109	108	106	104
	V_2 ~ KIAS	127	127	127	127	127	126	124	122	121	118	116
	TOFL ~ FT	6850	6984	7119	7254	7388	7455	7467	7466	7482	7405	7310
17,000 lb **7711 kg**	V_1 ~ KIAS	112	112	112	112	112	111	110	109	108	106	104
	V_R ~ KIAS	112	112	112	112	112	111	110	109	108	106	104
	V_2 ~ KIAS	127	127	127	127	127	126	124	123	121	119	116
	TOFL ~ FT	6823	6955	7088	7220	7353	7419	7428	7423	7434	7354	7255

COMPACTED SNOW RUNWAY CONDITION

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Table 38

Flaps 15° **Field Pressure Altitude (7000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
	V$_1$ ~ KIAS	113	113	113	113	112	111	109	111	112	114	
28,000 lb	V$_R$ ~ KIAS	132	132	133	133	133	133	133	133	133	133	
12,701 kg	V$_2$ ~ KIAS	140	140	140	140	140	139	139	139	138	138	
	TOFL ~ FT	7400	7580	7767	7942	7984	8015	8053	8443	8877	9407	
	V$_1$ ~ KIAS	113	113	113	113	112	110	109	108	108	109	111
27,000 lb	V$_R$ ~ KIAS	129	130	130	130	130	130	130	130	130	130	130
12,247 kg	V$_2$ ~ KIAS	138	138	138	138	137	137	137	136	136	136	135
	TOFL ~ FT	7396	7572	7756	7927	7967	7994	8029	8042	8239	8739	9267
	V$_1$ ~ KIAS	113	113	113	113	112	110	109	108	106	105	107
26,000 lb	V$_R$ ~ KIAS	126	126	127	127	127	127	127	127	127	127	127
11,793 kg	V$_2$ ~ KIAS	136	135	135	135	135	135	134	134	134	133	133
	TOFL ~ FT	7397	7570	7750	7917	7955	7980	8011	8020	8015	8079	8571
	V$_1$ ~ KIAS	113	113	113	113	112	110	109	108	106	105	103
25,000 lb	V$_R$ ~ KIAS	123	123	123	123	123	123	124	124	124	124	124
11,340 kg	V$_2$ ~ KIAS	133	133	133	133	132	132	132	131	131	131	130
	TOFL ~ FT	7369	7538	7713	7876	7912	7934	7963	7968	7958	7966	7903
	V$_1$ ~ KIAS	113	113	113	113	111	110	109	108	106	105	103
24,000 lb	V$_R$ ~ KIAS	120	120	120	120	120	120	120	121	121	121	121
10,886 kg	V$_2$ ~ KIAS	131	131	130	130	130	130	129	129	128	128	128
	TOFL ~ FT	7331	7496	7668	7826	7860	7879	7905	7906	7892	7895	7828
	V$_1$ ~ KIAS	113	113	113	113	111	110	109	108	106	104	102
23,000 lb	V$_R$ ~ KIAS	116	116	116	116	116	117	117	117	117	118	118
10,433 kg	V$_2$ ~ KIAS	128	128	128	128	127	127	127	126	126	125	125
	TOFL ~ FT	7289	7450	7617	7771	7803	7820	7843	7840	7822	7820	7749
	V$_1$ ~ KIAS	112	112	113	112	111	110	109	107	106	104	102
22,000 lb	V$_R$ ~ KIAS	113	113	113	113	114	114	114	115	115	115	115
9979 kg	V$_2$ ~ KIAS	126	126	126	126	125	125	125	124	124	123	123
	TOFL ~ FT	7247	7404	7566	7715	7745	7760	7780	7773	7751	7744	7670
	V$_1$ ~ KIAS	112	112	112	112	111	110	109	107	106	104	102
21,000 lb	V$_R$ ~ KIAS	112	112	112	112	111	111	111	112	112	112	113
9525 kg	V$_2$ ~ KIAS	126	126	126	125	124	123	123	122	122	121	120
	TOFL ~ FT	7207	7359	7517	7661	7690	7702	7719	7709	7683	7671	7593
	V$_1$ ~ KIAS	112	112	112	112	111	110	109	107	106	104	102
20,000 lb	V$_R$ ~ KIAS	112	112	112	112	111	110	109	108	109	109	109
9072 kg	V$_2$ ~ KIAS	127	126	126	126	124	123	121	120	119	119	118
	TOFL ~ FT	7166	7314	7467	7607	7634	7644	7658	7644	7614	7598	7516
	V$_1$ ~ KIAS	112	112	112	112	111	110	108	107	105	104	102
19,000 lb	V$_R$ ~ KIAS	112	112	112	112	111	110	109	107	106	106	106
8618 kg	V$_2$ ~ KIAS	127	127	126	126	125	123	121	120	118	117	116
	TOFL ~ FT	7131	7275	7423	7559	7584	7591	7602	7585	7551	7530	7445
	V$_1$ ~ KIAS	112	112	112	112	111	109	108	107	105	104	102
18,000 lb	V$_R$ ~ KIAS	112	112	112	112	111	109	108	107	105	104	103
8165 kg	V$_2$ ~ KIAS	127	127	127	126	125	123	122	120	118	116	114
	TOFL ~ FT	7101	7241	7384	7516	7539	7545	7553	7532	7494	7468	7380
	V$_1$ ~ KIAS	111	111	112	111	110	109	108	107	105	104	102
17,000 lb	V$_R$ ~ KIAS	111	112	112	112	110	109	108	107	105	104	102
7711 kg	V$_2$ ~ KIAS	128	127	127	126	125	124	122	120	118	116	114
	TOFL ~ FT	7078	7214	7353	7480	7502	7505	7511	7487	7445	7414	7322

COMPACTED SNOW RUNWAY CONDITION

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Non-FAA Approved Performance Data

Table 39

Flaps 15° **Field Pressure Altitude (8000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**
28,000 lb **12,701 kg**	V_1 ~ KIAS	113	113	112	111	110	110	111	112	114		
	V_R ~ KIAS	132	133	133	133	133	133	133	133	133		
	V_2 ~ KIAS	140	140	140	139	139	139	139	138	138		
	TOFL ~ FT	7746	7938	8033	8082	8120	8332	8698	9135	9616		
27,000 lb **12,247 kg**	V_1 ~ KIAS	113	113	112	111	110	109	107	108	110	111	
	V_R ~ KIAS	130	130	130	130	130	130	130	130	130	130	
	V_2 ~ KIAS	138	138	137	137	137	137	136	136	136	135	
	TOFL ~ FT	7738	7926	8017	8063	8098	8121	8134	8481	8934	9452	
26,000 lb **11,793 kg**	V_1 ~ KIAS	113	113	112	111	110	109	107	106	105	107	108
	V_R ~ KIAS	126	126	127	127	127	127	127	127	127	127	127
	V_2 ~ KIAS	135	135	135	135	134	134	134	133	133	133	132
	TOFL ~ FT	7735	7919	8007	8050	8081	8102	8111	8140	8262	8744	9270
25,000 lb **11,340 kg**	V_1 ~ KIAS	113	113	112	111	110	108	107	106	105	103	104
	V_R ~ KIAS	123	123	123	123	124	124	124	124	124	124	124
	V_2 ~ KIAS	133	133	133	132	132	132	131	131	131	130	130
	TOFL ~ FT	7702	7881	7965	8005	8034	8052	8058	8083	8139	8094	8507
24,000 lb **10,886 kg**	V_1 ~ KIAS	113	113	112	111	110	108	107	106	105	103	101
	V_R ~ KIAS	120	120	120	120	120	120	121	121	121	121	121
	V_2 ~ KIAS	131	130	130	130	129	129	129	128	128	128	127
	TOFL ~ FT	7659	7834	7914	7951	7977	7992	7996	8016	8067	8018	7971
23,000 lb **10,433 kg**	V_1 ~ KIAS	113	113	112	111	109	108	107	106	105	103	101
	V_R ~ KIAS	116	116	116	117	117	117	117	117	118	118	118
	V_2 ~ KIAS	128	128	127	127	127	126	126	126	125	125	124
	TOFL ~ FT	7612	7782	7859	7892	7916	7928	7930	7945	7991	7938	7886
22,000 lb **9979 kg**	V_1 ~ KIAS	112	113	112	111	109	108	107	106	104	103	101
	V_R ~ KIAS	113	113	113	114	114	114	115	115	115	115	115
	V_2 ~ KIAS	126	126	126	125	125	124	124	124	123	123	122
	TOFL ~ FT	7565	7729	7802	7833	7854	7864	7862	7874	7914	7857	7801
21,000 lb **9525 kg**	V_1 ~ KIAS	112	112	112	110	109	108	107	105	104	102	101
	V_R ~ KIAS	112	112	112	111	111	111	112	112	112	113	113
	V_2 ~ KIAS	126	126	125	123	123	122	122	121	121	121	120
	TOFL ~ FT	7519	7679	7748	7776	7794	7802	7798	7805	7839	7779	7719
20,000 lb **9072 kg**	V_1 ~ KIAS	112	112	111	110	109	108	107	105	104	102	101
	V_R ~ KIAS	112	112	112	110	109	108	108	109	109	110	110
	V_2 ~ KIAS	126	126	125	123	122	120	120	119	119	118	118
	TOFL ~ FT	7474	7628	7694	7719	7734	7739	7733	7736	7765	7701	7637
19,000 lb **8618 kg**	V_1 ~ KIAS	112	112	111	110	109	108	106	105	104	102	100
	V_R ~ KIAS	112	112	111	110	109	108	107	105	106	106	107
	V_2 ~ KIAS	127	126	125	124	122	121	119	117	117	116	116
	TOFL ~ FT	7433	7583	7645	7667	7680	7682	7674	7673	7696	7628	7560
18,000 lb **8165 kg**	V_1 ~ KIAS	112	112	111	110	109	108	106	105	104	102	100
	V_R ~ KIAS	112	112	111	110	109	108	106	105	104	103	104
	V_2 ~ KIAS	127	127	125	124	122	121	119	117	116	114	114
	TOFL ~ FT	7399	7544	7602	7622	7632	7632	7621	7616	7634	7562	7490
17,000 lb **7711 kg**	V_1 ~ KIAS	111	112	111	110	109	107	106	105	104	102	100
	V_R ~ KIAS	112	112	111	110	109	107	106	105	104	102	101
	V_2 ~ KIAS	127	127	126	124	123	121	119	118	116	114	112
	TOFL ~ FT	7372	7511	7566	7583	7592	7589	7576	7567	7579	7504	7428

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Table 40

Flaps 15° **Field Pressure Altitude (9000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS	113	112	110	110	111	112	113				
	V_R ~ KIAS	133	133	133	133	133	133	133				
	V_2 ~ KIAS	140	140	139	139	139	138	138				
	TOFL ~ FT	8087	8130	8175	8271	8625	9003	9407				
27,000 lb 12,247 kg	V_1 ~ KIAS	113	112	110	109	108	108	109	110			
	V_R ~ KIAS	130	130	130	130	130	130	130	130			
	V_2 ~ KIAS	137	137	137	137	136	136	136	135			
	TOFL ~ FT	8072	8112	8154	8190	8212	8365	8735	9171			
26,000 lb 11,793 kg	V_1 ~ KIAS	113	111	110	109	108	106	105	105	107	108	
	V_R ~ KIAS	127	127	127	127	127	127	127	127	127	127	
	V_2 ~ KIAS	135	135	135	134	134	134	133	133	133	132	
	TOFL ~ FT	8062	8100	8139	8171	8191	8203	8230	8481	8927	9449	
25,000 lb 11,340 kg	V_1 ~ KIAS	113	111	110	109	108	106	105	104	102	104	106
	V_R ~ KIAS	123	123	124	124	124	124	124	124	124	124	124
	V_2 ~ KIAS	133	132	132	132	131	131	131	130	130	130	129
	TOFL ~ FT	8021	8057	8093	8122	8139	8148	8172	8182	8193	8673	9200
24,000 lb 10,886 kg	V_1 ~ KIAS	113	111	110	109	108	106	105	104	102	101	101
	V_R ~ KIAS	120	120	120	120	121	121	121	121	121	121	121
	V_2 ~ KIAS	130	130	130	129	129	129	128	128	127	127	127
	TOFL ~ FT	7971	8004	8037	8064	8078	8084	8105	8111	8117	8137	8425
23,000 lb 10,433 kg	V_1 ~ KIAS	112	111	110	109	107	106	105	104	102	101	99
	V_R ~ KIAS	116	117	117	117	117	117	117	118	118	118	118
	V_2 ~ KIAS	128	127	127	127	126	126	125	125	125	124	124
	TOFL ~ FT	7915	7946	7976	8000	8012	8016	8034	8035	8036	8051	8003
22,000 lb 9979 kg	V_1 ~ KIAS	112	111	110	109	107	106	105	104	102	101	99
	V_R ~ KIAS	113	114	114	114	114	115	115	115	115	115	115
	V_2 ~ KIAS	126	125	125	125	124	124	124	123	123	122	122
	TOFL ~ FT	7860	7888	7916	7936	7946	7947	7962	7959	7956	7965	7912
21,000 lb 9525 kg	V_1 ~ KIAS	112	111	110	109	107	106	105	103	102	101	99
	V_R ~ KIAS	112	111	111	111	111	112	112	112	113	113	113
	V_2 ~ KIAS	125	124	123	123	122	122	121	121	120	120	119
	TOFL ~ FT	7806	7832	7857	7875	7882	7881	7893	7886	7878	7882	7825
20,000 lb 9072 kg	V_1 ~ KIAS	112	111	110	108	107	106	105	103	102	101	99
	V_R ~ KIAS	112	111	110	108	108	108	109	109	109	110	110
	V_2 ~ KIAS	125	124	122	121	120	120	119	119	118	118	117
	TOFL ~ FT	7753	7776	7798	7813	7818	7814	7824	7813	7800	7799	7738
19,000 lb 8618 kg	V_1 ~ KIAS	112	111	109	108	107	106	105	103	102	100	99
	V_R ~ KIAS	112	111	110	108	107	106	105	106	106	107	107
	V_2 ~ KIAS	126	124	123	121	120	118	117	117	116	116	115
	TOFL ~ FT	7704	7726	7745	7758	7760	7754	7761	7746	7728	7722	7656
18,000 lb 8165 kg	V_1 ~ KIAS	112	110	109	108	107	106	104	103	102	100	98
	V_R ~ KIAS	112	111	109	108	107	106	104	103	103	104	104
	V_2 ~ KIAS	126	124	123	121	120	118	117	115	114	114	113
	TOFL ~ FT	7663	7682	7699	7709	7708	7700	7704	7686	7663	7651	7582
17,000 lb 7711 kg	V_1 ~ KIAS	111	110	109	108	107	105	104	103	101	100	98
	V_R ~ KIAS	111	110	109	108	107	105	104	103	102	101	101
	V_2 ~ KIAS	126	125	123	122	120	118	117	115	113	112	111
	TOFL ~ FT	7628	7645	7659	7667	7664	7654	7655	7633	7606	7589	7515

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Table 41

Flaps 15° **Field Pressure Altitude (10,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb **12,701 kg**	V_1 ~ KIAS	111	110	110	111	112	114					
	V_R ~ KIAS	133	133	133	133	133	133					
	V_2 ~ KIAS	139	139	139	139	138	138					
	TOFL ~ FT	8231	8268	8564	8944	9336	9751					
27,000 lb **12,247 kg**	V_1 ~ KIAS	111	110	108	107	108	109	110				
	V_R ~ KIAS	130	130	130	130	130	130	130				
	V_2 ~ KIAS	137	137	136	136	136	136	135				
	TOFL ~ FT	8211	8246	8281	8312	8672	9054	9459				
26,000 lb **11,793 kg**	V_1 ~ KIAS	111	110	108	107	106	105	106	107			
	V_R ~ KIAS	127	127	127	127	127	127	127	127			
	V_2 ~ KIAS	135	134	134	134	133	133	133	133			
	TOFL ~ FT	8197	8229	8261	8287	8306	8380	8743	9194			
25,000 lb **11,340 kg**	V_1 ~ KIAS	111	109	108	107	106	104	103	103	104	106	
	V_R ~ KIAS	124	124	124	124	124	124	124	124	124	124	
	V_2 ~ KIAS	132	132	131	131	131	131	130	130	130	129	
	TOFL ~ FT	8151	8181	8210	8232	8249	8270	8280	8436	8874	9401	
24,000 lb **10,886 kg**	V_1 ~ KIAS	111	109	108	107	106	104	103	102	101	101	103
	V_R ~ KIAS	120	120	121	121	121	121	121	121	121	121	121
	V_2 ~ KIAS	130	129	129	129	128	128	128	127	127	127	126
	TOFL ~ FT	8095	8123	8149	8169	8183	8201	8208	8251	8314	8611	9140
23,000 lb **10,433 kg**	V_1 ~ KIAS	110	109	108	107	106	104	103	102	101	99	99
	V_R ~ KIAS	117	117	117	117	117	117	117	118	118	118	118
	V_2 ~ KIAS	127	127	126	126	126	125	125	125	124	124	123
	TOFL ~ FT	8035	8061	8084	8101	8113	8127	8132	8170	8227	8194	8164
22,000 lb **9979 kg**	V_1 ~ KIAS	110	109	108	107	105	104	103	102	101	99	97
	V_R ~ KIAS	114	114	114	115	115	115	115	115	115	115	116
	V_2 ~ KIAS	125	125	124	124	124	123	123	122	122	122	121
	TOFL ~ FT	7974	7998	8018	8032	8041	8053	8055	8088	8139	8102	8044
21,000 lb **9525 kg**	V_1 ~ KIAS	110	109	108	107	105	104	103	102	101	99	97
	V_R ~ KIAS	111	111	111	112	112	112	112	113	113	113	113
	V_2 ~ KIAS	123	123	122	122	121	121	121	120	120	119	119
	TOFL ~ FT	7916	7937	7955	7967	7973	7982	7981	8010	8054	8013	7950
20,000 lb **9072 kg**	V_1 ~ KIAS	110	109	108	106	105	104	103	102	101	99	97
	V_R ~ KIAS	110	109	108	108	109	109	109	110	110	110	110
	V_2 ~ KIAS	123	121	120	120	119	119	119	118	118	117	117
	TOFL ~ FT	7858	7877	7892	7901	7905	7911	7908	7931	7970	7924	7857
19,000 lb **8618 kg**	V_1 ~ KIAS	110	109	108	106	105	104	103	101	100	99	97
	V_R ~ KIAS	110	109	108	106	105	106	106	106	107	107	107
	V_2 ~ KIAS	123	122	120	119	117	117	116	116	116	115	115
	TOFL ~ FT	7805	7822	7835	7841	7842	7846	7840	7859	7891	7841	7770
18,000 lb **8165 kg**	V_1 ~ KIAS	110	109	107	106	105	104	102	101	100	99	97
	V_R ~ KIAS	110	109	107	106	105	104	103	103	104	104	104
	V_2 ~ KIAS	123	122	120	119	117	116	114	114	114	113	112
	TOFL ~ FT	7759	7774	7785	7788	7787	7788	7780	7793	7820	7765	7691
17,000 lb **7711 kg**	V_1 ~ KIAS	110	108	107	106	105	104	102	101	100	98	97
	V_R ~ KIAS	110	108	107	106	105	104	102	101	101	101	101
	V_2 ~ KIAS	124	122	121	119	118	116	114	113	112	111	110
	TOFL ~ FT	7721	7734	7742	7743	7739	7738	7727	7736	7757	7698	7619

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Table 42

Flaps 15° Field Pressure Altitude (11,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb **12,701 kg**	V_1 ~ KIAS	110	111	112	113							
	V_R ~ KIAS	133	133	133	133							
	V_2 ~ KIAS	139	139	138	138							
	TOFL ~ FT	8527	8880	9274	9694							
27,000 lb **12,247 kg**	V_1 ~ KIAS	109	107	108	109	110						
	V_R ~ KIAS	130	130	130	130	130						
	V_2 ~ KIAS	137	136	136	136	135						
	TOFL ~ FT	8317	8352	8616	9002	9396						
26,000 lb **11,793 kg**	V_1 ~ KIAS	109	107	106	105	106	107	108				
	V_R ~ KIAS	127	127	127	127	127	127	127				
	V_2 ~ KIAS	134	134	134	133	133	133	132				
	TOFL ~ FT	8298	8331	8364	8398	8687	9069	9478				
25,000 lb **11,340 kg**	V_1 ~ KIAS	109	107	106	105	104	102	103	104			
	V_R ~ KIAS	124	124	124	124	124	124	124	124			
	V_2 ~ KIAS	132	131	131	131	130	130	130	129			
	TOFL ~ FT	8248	8278	8308	8339	8358	8379	8696	9138			
24,000 lb **10,886 kg**	V_1 ~ KIAS	108	107	106	105	104	102	101	100	101	103	
	V_R ~ KIAS	121	121	121	121	121	121	121	121	121	121	
	V_2 ~ KIAS	129	129	128	128	128	127	127	127	127	126	
	TOFL ~ FT	8188	8215	8243	8270	8286	8304	8336	8382	8810	9333	
23,000 lb **10,433 kg**	V_1 ~ KIAS	108	107	106	105	103	102	101	100	99	100	100
	V_R ~ KIAS	117	117	117	117	117	118	118	118	118	118	118
	V_2 ~ KIAS	126	126	126	125	125	125	124	124	124	123	123
	TOFL ~ FT	8123	8149	8173	8197	8211	8225	8254	8283	8302	8713	9008
22,000 lb **9979 kg**	V_1 ~ KIAS	108	107	106	105	103	102	101	100	98	97	96
	V_R ~ KIAS	114	115	115	115	115	115	115	115	115	116	116
	V_2 ~ KIAS	125	124	124	123	123	123	122	122	121	121	120
	TOFL ~ FT	8058	8081	8103	8124	8135	8147	8171	8196	8209	8208	8300
21,000 lb **9525 kg**	V_1 ~ KIAS	108	107	106	105	103	102	101	100	98	97	95
	V_R ~ KIAS	111	112	112	112	112	112	112	113	113	113	113
	V_2 ~ KIAS	122	122	122	121	121	120	120	120	119	119	118
	TOFL ~ FT	7995	8016	8035	8053	8061	8070	8092	8112	8120	8113	8060
20,000 lb **9072 kg**	V_1 ~ KIAS	108	107	106	104	103	102	101	100	98	97	95
	V_R ~ KIAS	108	108	109	109	109	109	110	110	110	110	110
	V_2 ~ KIAS	120	120	119	119	119	118	118	118	117	117	116
	TOFL ~ FT	7933	7952	7968	7983	7989	7995	8013	8028	8031	8019	7962
19,000 lb **8618 kg**	V_1 ~ KIAS	108	107	105	104	103	102	101	100	98	97	95
	V_R ~ KIAS	108	107	106	106	106	106	106	107	107	107	107
	V_2 ~ KIAS	120	119	118	117	116	116	116	115	115	115	114
	TOFL ~ FT	7876	7893	7907	7919	7922	7926	7941	7951	7948	7931	7869
18,000 lb **8165 kg**	V_1 ~ KIAS	108	107	105	104	103	102	101	99	98	97	95
	V_R ~ KIAS	108	107	105	104	103	103	103	104	104	104	105
	V_2 ~ KIAS	121	119	118	116	115	114	114	113	113	112	112
	TOFL ~ FT	7827	7841	7852	7862	7862	7863	7875	7880	7873	7851	7784
17,000 lb **7711 kg**	V_1 ~ KIAS	107	106	105	104	103	102	100	99	98	96	95
	V_R ~ KIAS	108	106	105	104	103	102	101	100	101	101	102
	V_2 ~ KIAS	121	120	118	116	115	113	112	111	111	110	110
	TOFL ~ FT	7785	7798	7806	7813	7811	7809	7818	7819	7806	7779	7707

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Table 43

Flaps 15° Field Pressure Altitude (12,000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb 12,701 kg	V_1 ~ KIAS	112	113									
	V_R ~ KIAS	133	133									
	V_2 ~ KIAS	138	138									
	TOFL ~ FT	9342	9732									
27,000 lb 12,247 kg	V_1 ~ KIAS	108	109	110	111							
	V_R ~ KIAS	130	130	130	130							
	V_2 ~ KIAS	136	136	136	135							
	TOFL ~ FT	8681	9039	9436	9870							
26,000 lb 11,793 kg	V_1 ~ KIAS	107	105	105	106	107						
	V_R ~ KIAS	127	127	127	127	127						
	V_2 ~ KIAS	134	133	133	133	132						
	TOFL ~ FT	8507	8542	8733	9127	9520						
25,000 lb 11,340 kg	V_1 ~ KIAS	107	105	104	103	103	104					
	V_R ~ KIAS	124	124	124	124	124	124					
	V_2 ~ KIAS	131	131	130	130	130	130					
	TOFL ~ FT	8451	8483	8510	8538	8737	9119					
24,000 lb 10,886 kg	V_1 ~ KIAS	106	105	104	103	102	101	101	102			
	V_R ~ KIAS	121	121	121	121	121	121	121	121			
	V_2 ~ KIAS	129	128	128	128	127	127	127	126			
	TOFL ~ FT	8385	8414	8439	8464	8497	8531	8728	9181			
23,000 lb 10,433 kg	V_1 ~ KIAS	106	105	104	103	102	100	99	98	98	100	
	V_R ~ KIAS	117	117	118	118	118	118	118	118	118	118	
	V_2 ~ KIAS	126	126	125	125	125	124	124	124	123	123	
	TOFL ~ FT	8314	8341	8363	8384	8414	8445	8478	8530	8744	9307	
22,000 lb 9979 kg	V_1 ~ KIAS	106	105	104	103	101	100	99	98	97	96	98
	V_R ~ KIAS	115	115	115	115	115	115	115	115	116	116	116
	V_2 ~ KIAS	124	124	123	123	122	122	122	121	121	120	120
	TOFL ~ FT	8243	8268	8287	8305	8332	8360	8389	8435	8471	8577	9106
21,000 lb 9525 kg	V_1 ~ KIAS	106	105	104	103	101	100	99	98	97	95	94
	V_R ~ KIAS	112	112	112	112	112	113	113	113	113	113	113
	V_2 ~ KIAS	122	121	121	121	120	120	120	119	119	118	118
	TOFL ~ FT	8175	8197	8214	8229	8253	8277	8303	8343	8373	8338	8339
20,000 lb 9072 kg	V_1 ~ KIAS	106	105	104	102	101	100	99	98	97	95	93
	V_R ~ KIAS	109	109	109	109	109	110	110	110	110	110	110
	V_2 ~ KIAS	120	119	119	118	118	118	118	117	117	116	116
	TOFL ~ FT	8107	8127	8141	8153	8174	8195	8218	8252	8276	8236	8167
19,000 lb 8618 kg	V_1 ~ KIAS	106	105	104	102	101	100	99	98	97	95	93
	V_R ~ KIAS	106	106	106	106	106	107	107	107	107	107	107
	V_2 ~ KIAS	118	117	117	116	116	116	115	115	115	114	114
	TOFL ~ FT	8046	8063	8074	8084	8101	8119	8139	8167	8186	8141	8068
18,000 lb 8165 kg	V_1 ~ KIAS	106	105	103	102	101	100	99	98	97	95	93
	V_R ~ KIAS	106	105	104	103	103	103	104	104	104	105	105
	V_2 ~ KIAS	118	117	115	114	114	113	113	113	112	112	111
	TOFL ~ FT	7991	8007	8015	8021	8036	8051	8068	8090	8103	8053	7975
17,000 lb 7711 kg	V_1 ~ KIAS	106	104	103	102	101	100	99	98	96	95	93
	V_R ~ KIAS	106	104	103	102	101	100	100	101	101	102	102
	V_2 ~ KIAS	118	117	115	114	113	111	111	110	110	110	109
	TOFL ~ FT	7945	7958	7965	7968	7980	7992	8005	8022	8029	7974	7892

COMPACTED SNOW RUNWAY CONDITION

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Table 44

Flaps 15° **Field Pressure Altitude (13,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb **12,701 kg**	V$_1$ ~ KIAS											
	V$_R$ ~ KIAS											
	V$_2$ ~ KIAS											
	TOFL ~ FT											
27,000 lb **12,247 kg**	V$_1$ ~ KIAS											
	V$_R$ ~ KIAS											
	V$_2$ ~ KIAS											
	TOFL ~ FT											
26,000 lb **11,793 kg**	V$_1$ ~ KIAS	105	106	107								
	V$_R$ ~ KIAS	127	127	127								
	V$_2$ ~ KIAS	133	133	133								
	TOFL ~ FT	8882	9246	9655								
25,000 lb **11,340 kg**	V$_1$ ~ KIAS	104	103	103	104	104						
	V$_R$ ~ KIAS	124	124	124	124	124						
	V$_2$ ~ KIAS	131	130	130	130	129						
	TOFL ~ FT	8730	8764	8865	9264	9662						
24,000 lb **10,886 kg**	V$_1$ ~ KIAS	104	103	102	101	100	101					
	V$_R$ ~ KIAS	121	121	121	121	121	121					
	V$_2$ ~ KIAS	128	128	127	127	127	127					
	TOFL ~ FT	8657	8688	8726	8772	8866	9244					
23,000 lb **10,433 kg**	V$_1$ ~ KIAS	104	103	102	101	100	99	98	99			
	V$_R$ ~ KIAS	118	118	118	118	118	118	118	118			
	V$_2$ ~ KIAS	125	125	125	124	124	124	123	123			
	TOFL ~ FT	8580	8609	8643	8685	8722	8754	8789	9229			
22,000 lb **9979 kg**	V$_1$ ~ KIAS	104	103	102	101	100	99	97	96	96	98	
	V$_R$ ~ KIAS	115	115	115	115	115	115	115	115	115	116	
	V$_2$ ~ KIAS	123	123	123	122	122	121	121	121	120	120	
	TOFL ~ FT	8503	8529	8560	8598	8632	8661	8678	8707	8954	9489	
21,000 lb **9525 kg**	V$_1$ ~ KIAS	104	103	102	101	100	98	97	96	95	94	95
	V$_R$ ~ KIAS	112	112	112	113	113	113	113	113	113	113	113
	V$_2$ ~ KIAS	121	121	120	120	120	119	119	119	118	118	117
	TOFL ~ FT	8428	8452	8480	8514	8545	8570	8584	8608	8628	8691	9238
20,000 lb **9072 kg**	V$_1$ ~ KIAS	104	103	102	101	99	98	97	96	95	93	91
	V$_R$ ~ KIAS	109	109	109	110	110	110	110	110	110	110	110
	V$_2$ ~ KIAS	119	119	118	118	118	117	117	117	116	116	116
	TOFL ~ FT	8354	8375	8400	8431	8458	8481	8491	8509	8523	8502	8444
19,000 lb **8618 kg**	V$_1$ ~ KIAS	104	103	102	100	99	98	97	96	95	93	91
	V$_R$ ~ KIAS	106	106	106	107	107	107	107	107	107	107	107
	V$_2$ ~ KIAS	117	116	116	116	115	115	115	114	114	114	113
	TOFL ~ FT	8287	8306	8328	8355	8379	8398	8405	8418	8426	8399	8336
18,000 lb **8165 kg**	V$_1$ ~ KIAS	104	103	101	100	99	98	97	96	94	93	91
	V$_R$ ~ KIAS	104	103	103	103	104	104	104	104	105	105	105
	V$_2$ ~ KIAS	116	114	114	114	113	113	112	112	112	111	111
	TOFL ~ FT	8228	8244	8263	8286	8307	8323	8327	8334	8337	8304	8236
17,000 lb **7711 kg**	V$_1$ ~ KIAS	104	102	101	100	99	98	97	96	94	93	91
	V$_R$ ~ KIAS	104	102	101	101	100	101	101	101	102	102	102
	V$_2$ ~ KIAS	116	114	113	112	111	111	110	110	109	109	108
	TOFL ~ FT	8177	8191	8207	8227	8245	8257	8258	8260	8257	8219	8145

COMPACTED SNOW RUNWAY CONDITION

RGACTO003C

Table 45

Flaps 15° **Field Pressure Altitude (14,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C										
		-30	-25	-20	-15	-10	-5	0	5	10	15	20
28,000 lb **12,701 kg**	V_1 ~ KIAS											
	V_R ~ KIAS											
	V_2 ~ KIAS											
	TOFL ~ FT											
27,000 lb **12,247 kg**	V_1 ~ KIAS											
	V_R ~ KIAS											
	V_2 ~ KIAS											
	TOFL ~ FT											
26,000 lb **11,793 kg**	V_1 ~ KIAS											
	V_R ~ KIAS											
	V_2 ~ KIAS											
	TOFL ~ FT											
25,000 lb **11,340 kg**	V_1 ~ KIAS	103	103	104								
	V_R ~ KIAS	124	124	124								
	V_2 ~ KIAS	130	130	129								
	TOFL ~ FT	9045	9395	9808								
24,000 lb **10,886 kg**	V_1 ~ KIAS	102	101	100	101	102						
	V_R ~ KIAS	121	121	121	121	121						
	V_2 ~ KIAS	128	127	127	127	126						
	TOFL ~ FT	8965	9004	9052	9411	9803						
23,000 lb **10,433 kg**	V_1 ~ KIAS	102	101	100	99	98	98	99				
	V_R ~ KIAS	118	118	118	118	118	118	118				
	V_2 ~ KIAS	125	124	124	124	123	123	123				
	TOFL ~ FT	8880	8916	8961	9008	9034	9309	9725				
22,000 lb **9979 kg**	V_1 ~ KIAS	102	101	100	99	98	97	96	97			
	V_R ~ KIAS	115	115	115	115	115	115	115	115			
	V_2 ~ KIAS	123	122	122	122	121	121	121	120			
	TOFL ~ FT	8795	8828	8869	8912	8935	8963	9005	9426			
21,000 lb **9525 kg**	V_1 ~ KIAS	102	101	100	99	98	97	96	94	94	95	
	V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	
	V_2 ~ KIAS	120	120	120	119	119	119	119	118	118	117	
	TOFL ~ FT	8714	8744	8781	8821	8840	8864	8902	8962	9100	9645	
20,000 lb **9072 kg**	V_1 ~ KIAS	102	101	100	99	98	96	95	94	93	91	93
	V_R ~ KIAS	109	110	110	110	110	110	110	110	110	110	110
	V_2 ~ KIAS	118	118	118	117	117	117	117	116	116	116	115
	TOFL ~ FT	8633	8661	8694	8730	8746	8766	8800	8854	8859	8820	9277
19,000 lb **8618 kg**	V_1 ~ KIAS	102	101	100	99	97	96	95	94	93	91	90
	V_R ~ KIAS	106	107	107	107	107	107	107	107	107	108	108
	V_2 ~ KIAS	116	116	115	115	115	115	114	114	114	113	113
	TOFL ~ FT	8558	8584	8614	8645	8658	8676	8705	8753	8752	8708	8638
18,000 lb **8165 kg**	V_1 ~ KIAS	102	101	100	99	97	96	95	94	93	91	89
	V_R ~ KIAS	103	103	104	104	104	104	104	105	105	105	105
	V_2 ~ KIAS	114	114	113	113	113	112	112	112	111	111	110
	TOFL ~ FT	8493	8515	8542	8570	8580	8594	8619	8660	8654	8604	8529
17,000 lb **7711 kg**	V_1 ~ KIAS	102	101	99	98	97	96	95	94	93	91	89
	V_R ~ KIAS	102	101	100	101	101	101	101	102	102	102	102
	V_2 ~ KIAS	113	112	111	111	110	110	110	109	109	108	108
	TOFL ~ FT	8436	8456	8480	8504	8511	8522	8543	8578	8565	8510	8430

COMPACTED SNOW RUNWAY CONDITION

RGACTO003C

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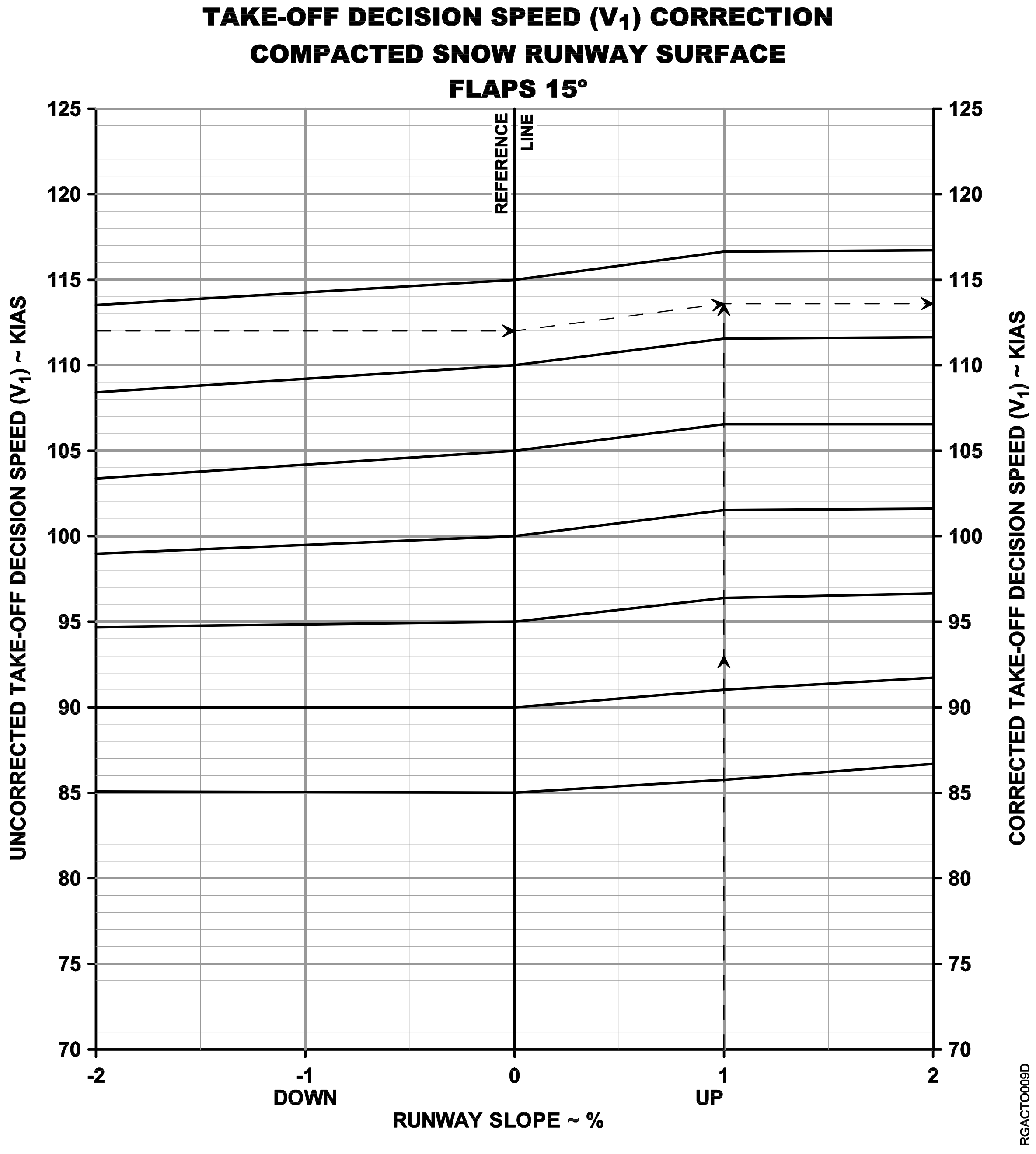
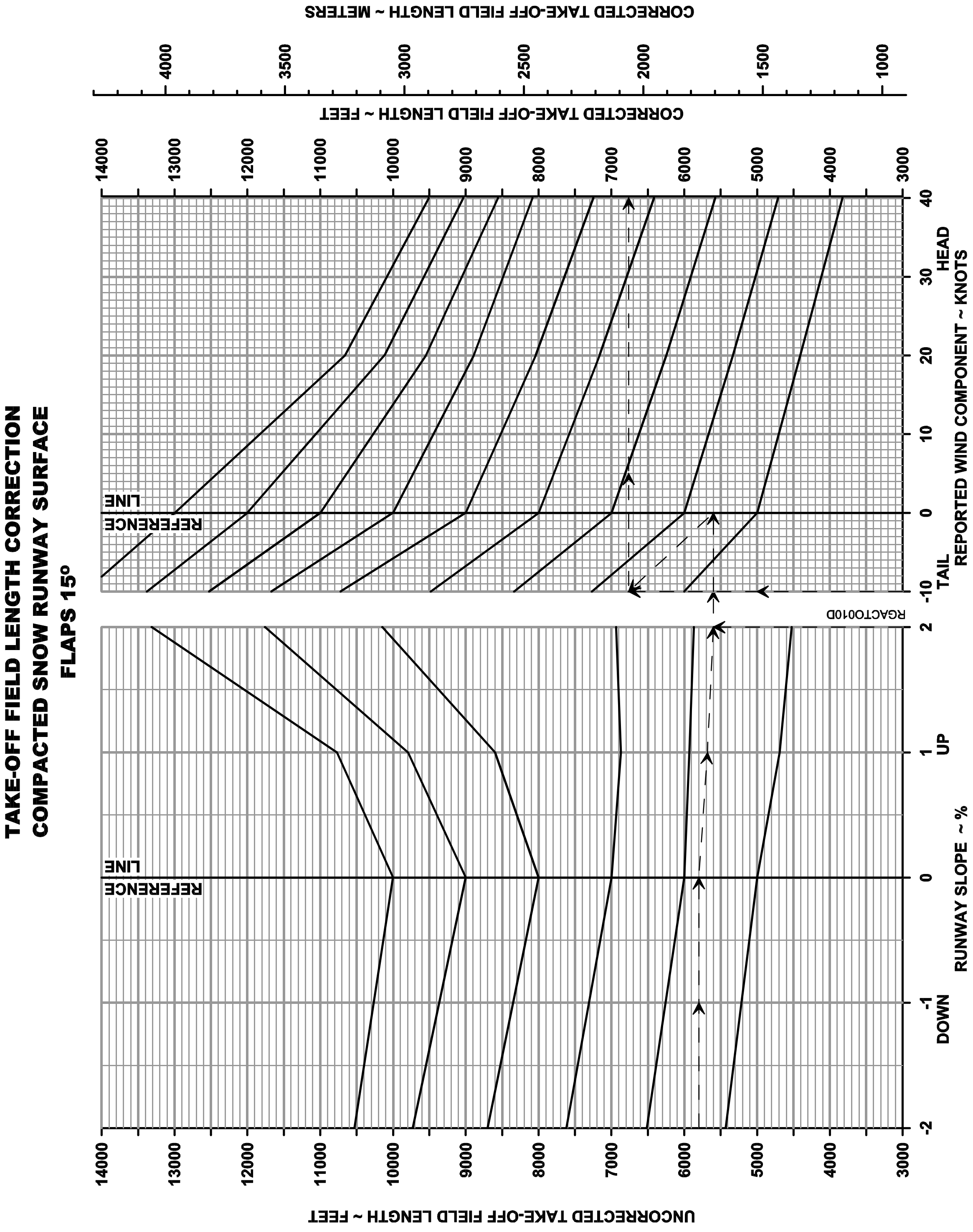


Take-Off Decision Speed (V_1) - Compacted Snow (Flaps 15°)

Corrected for Runway Gradient

Figure 6



Take-Off Field Length - Compacted Snow (Flaps 15°)

Corrected for Runway Gradient and Wind Component

Figure 7

Table 46

Flags 15° **Field Pressure Altitude (Sea Level)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	**-25**	**-20**	**-15**	**-10**	**-5**	**0**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**
28,000 lb **12,701 kg**	$V_1=V_R$ ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	131	132	132	132	132		
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	140	140	139	138	138		
	TOFL(STANDING WATER) ~ FT	9907	10088	10332	10582	10819	11011	11266	11508	11771	11983	12245	12608	13077	13582	14112	14536		
	TOFL(SLUSH) ~ FT	8903	9117	9270	9491	9649	9928	10188	10350	10603	10878	11043							
	TOFL(WET SNOW) ~ FT	8552	8697	8845	8994	9146	9298	9451	9604	9760	9929	10083							
	TOFL(DRY SNOW) ~ FT	8595	8742	8892	9042	9196	9350	9504	9659	9817	9986	10142							
27,000 lb **12,247 kg**	$V_1=V_R$ ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	128	129	129	129	129		
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	138	137	136	136	135		
	TOFL(STANDING WATER) ~ FT	9459	9633	9859	10084	10324	10512	10756	10989	11178	11430	11665	12025	12437	12853	13398	13961		
	TOFL(SLUSH) ~ FT	8496	8697	8843	9055	9206	9425	9639	9847	10089	10331	10502							
	TOFL(WET SNOW) ~ FT	8222	8361	8503	8646	8791	8937	9083	9229	9378	9529	9674							
	TOFL(DRY SNOW) ~ FT	8269	8410	8554	8699	8846	8993	9141	9289	9439	9592	9739							
26,000 lb **11,793 kg**	$V_1=V_R$ ~ KIAS	125	125	125	125	125	125	125	125	125	125	125	125	126	126	126	126	126	
	V_2 ~ KIAS	136	136	136	135	135	135	135	135	135	135	135	135	135	134	133	133	132	
	TOFL(STANDING WATER) ~ FT	8958	9180	9408	9624	9789	10022	10244	10473	10660	10889	11129	11407	11843	12200	12644	13206	13784	
	TOFL(SLUSH) ~ FT	8097	8299	8435	8636	8843	8987	9196	9342	9554	9748	9986							
	TOFL(WET SNOW) ~ FT	7901	8035	8171	8308	8447	8586	8726	8866	9007	9151	9289							
	TOFL(DRY SNOW) ~ FT	7952	8088	8226	8365	8505	8647	8788	8930	9073	9218	9358							
25,000 lb **11,340 kg**	$V_1=V_R$ ~ KIAS	122	122	122	122	122	122	122	122	122	122	122	122	123	123	123	123	123	
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	133	132	132	131	130	129	
	TOFL(STANDING WATER) ~ FT	8493	8706	8924	9071	9292	9502	9661	9886	10101	10273	10501	10804	11162	11477	11916	12358	12866	
	TOFL(SLUSH) ~ FT	7669	7864	7994	8192	8360	8526	8720	8858	9060	9202	9403							
	TOFL(WET SNOW) ~ FT	7549	7677	7806	7937	8069	8201	8333	8466	8600	8735	8867							
	TOFL(DRY SNOW) ~ FT	7602	7732	7863	7995	8129	8263	8398	8532	8668	8805	8939							
24,000 lb **10,886 kg**	$V_1=V_R$ ~ KIAS	119	119	119	119	119	119	119	119	119	119	119	119	120	120	120	120	120	120
	V_2 ~ KIAS	131	131	131	131	131	131	131	131	130	130	130	130	130	129	128	128	127	126
	TOFL(STANDING WATER) ~ FT	8052	8258	8445	8602	8816	9004	9171	9374	9535	9747	9952	10186	10561	10841	11192	11586	12092	12573
	TOFL(SLUSH) ~ FT	7151	7271	7575	7766	7891	8084	8274	8404	8593	8726	8918							
	TOFL(WET SNOW) ~ FT	7216	7338	7462	7586	7711	7837	7962	8088	8214	8342	8467							
	TOFL(DRY SNOW) ~ FT	7270	7394	7520	7646	7773	7900	8028	8156	8284	8414	8541							
23,000 lb **10,433 kg**	$V_1=V_R$ ~ KIAS	115	115	115	115	115	115	115	115	115	115	115	116	116	116	116	117	117	117
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	128	127	126	126	125	124	123
	TOFL(STANDING WATER) ~ FT	7635	7833	7961	8137	8324	8470	8676	8810	9016	9213	9364	9631	9916	10160	10503	10858	11251	11666
	TOFL(SLUSH) ~ FT	6807	6921	7040	7156	7449	7638	7758	7944	8064	8253	8372							
	TOFL(WET SNOW) ~ FT	6878	6994	7112	7229	7348	7467	7586	7704	7824	7944	8062							
	TOFL(DRY SNOW) ~ FT	6932	7051	7170	7290	7411	7531	7652	7773	7894	8016	8137							
22,000 lb **9979 kg**	$V_1=V_R$ ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	113	114	114	114	114	114	114
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	126	125	124	124	123	122	121
	TOFL(STANDING WATER) ~ FT	7286	7485	7678	7799	7995	8101	8296	8423	8615	8803	8944	9190	9455	9678	9933	10240	10644	11020
	TOFL(SLUSH) ~ FT	6557	6669	6783	6899	7010	7125	7414	7593	7771	7890	8067							
	TOFL(WET SNOW) ~ FT	6636	6748	6861	6974	7088	7202	7316	7430	7544	7658	7771							
	TOFL(DRY SNOW) ~ FT	6691	6806	6921	7036	7152	7268	7384	7499	7615	7732	7847							
21,000 lb **9525 kg**	$V_1=V_R$ ~ KIAS	113	113	113	113	113	112	112	112	112	113	113	113	111	111	111	112	112	112
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	126	124	122	121	120	120	119
	TOFL(STANDING WATER) ~ FT	7190	7383	7503	7691	7884	7987	8181	8306	8500	8627	8823	8980	9026	9187	9419	9695	10008	10322
	TOFL(SLUSH) ~ FT	6482	6595	6705	6819	6929	7101	7378	7501	7679	7792	7966							
	TOFL(WET SNOW) ~ FT	6565	6676	6788	6899	7011	7124	7236	7347	7459	7572	7683							
	TOFL(DRY SNOW) ~ FT	6623	6737	6850	6964	7078	7193	7307	7421	7535	7649	7763							
20,000 lb **9072 kg**	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	108	109	109	109
	V_2 ~ KIAS	126	127	127	127	127	127	126	126	126	126	126	126	124	120	119	118	118	117
	TOFL(STANDING WATER) ~ FT	7119	7313	7445	7617	7807	7911	8102	8223	8417	8542	8735	8887	8895	8681	8880	9119	9392	9676
	TOFL(SLUSH) ~ FT	6436	6549	6659	6769	6881	7146	7330	7452	7615	7756	7900							
	TOFL(WET SNOW) ~ FT	6523	6633	6744	6854	6965	7076	7187	7297	7408	7519	7629							
	TOFL(DRY SNOW) ~ FT	6584	6697	6809	6922	7036	7149	7262	7374	7487	7600	7713							
19,000 lb **8618 kg**	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	106	106	106	106
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	126	126	124	120	117	116	115	114
	TOFL(STANDING WATER) ~ FT	7066	7244	7416	7545	7732	7836	8025	8144	8335	8458	8649	8796	8790	8544	8328	8535	8769	9006
	TOFL(SLUSH) ~ FT	6397	6505	6614	6723	6885	7159	7273	7440	7553	7722	7834							
	TOFL(WET SNOW) ~ FT	6484	6594	6703	6813	6923	7033	7142	7251	7360	7470	7579							
	TOFL(DRY SNOW) ~ FT	6548	6661	6773	6885	6997	7109	7221	7332	7444	7555	7667							
18,000 lb **8165 kg**	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	111	108	105	103	103	103
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	126	124	121	117	114	113	112
	TOFL(STANDING WATER) ~ FT	7001	7177	7351	7474	7659	7763	7949	8066	8254	8373	8564	8703	8695	8404	8170	8074	8248	8452
	TOFL(SLUSH) ~ FT	6358	6467	6574	6683	6931	7112	7271	7386	7548	7663	7770							
	TOFL(WET SNOW) ~ FT	6449	6558	6667	6776	6885	6993	7101	7209	7317	7425	7533							
	TOFL(DRY SNOW) ~ FT	6517	6629	6740	6851	6962	7074	7184	7294	7404	7515	7625							
17,000 lb **7711 kg**	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	112	110	108	105	102	101	101
	V_2 ~ KIAS	128	128	128	128	128	128	127	127	127	127	127	127	124	121	117	113	111	110
	TOFL(STANDING WATER) ~ FT	6938	7124	7287	7417	7587	7703	7874	8003	8176	8293	8481	8614	8600	8318	8077	7881	7808	7986
	TOFL(SLUSH) ~ FT	6325	6430	6539	6729	6954	7063	7226	7332	7495	7604	7767							
	TOFL(WET SNOW) ~ FT	6419	6527	6635	6743	6850	6958	7065	7172	7278	7384	7491							
	TOFL(DRY SNOW) ~ FT	6490	6601	6712	6822	6932	7043	7152	7262	7371	7479	7589							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACTO004C

Table 47

Flaps 15° **Field Pressure Altitude (1000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1=V_R ~ KIAS	131	131	131	131	131	131	131	131	131	131	131	132	132	132	132			
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	140	139	138	138			
	TOFL(STANDING WATER) ~ FT	10320	10554	10801	11003	11263	11510	11776	11988	12266	12530	12865	13301	13675	14156	14780			
	TOFL(SLUSH) ~ FT	9263	9483	9641	9897	10155	10353	10609	10883	11064	11333	11655							
	TOFL(WET SNOW) ~ FT	8837	8986	9138	9293	9450	9608	9766	9933	10103	10270	10493							
	TOFL(DRY SNOW) ~ FT	8882	9033	9187	9344	9503	9662	9822	9990	10162	10331	10551							
27,000 lb **12,247 kg**	V_1=V_R ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	129	129	129	129			
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	138	137	137	136	135			
	TOFL(STANDING WATER) ~ FT	9844	10070	10254	10500	10736	10989	11182	11435	11681	11953	12210	12657	13084	13611	14133			
	TOFL(SLUSH) ~ FT	8833	9045	9196	9416	9572	9849	10094	10335	10517	10776	11096							
	TOFL(WET SNOW) ~ FT	8492	8636	8782	8930	9081	9232	9383	9534	9689	9852	10061							
	TOFL(DRY SNOW) ~ FT	8542	8687	8835	8986	9138	9291	9444	9596	9753	9919	10128							
26,000 lb **11,793 kg**	V_1=V_R ~ KIAS	125	125	125	125	125	125	125	125	125	125	125	126	126	126	126	126		
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	134	134	133	132		
	TOFL(STANDING WATER) ~ FT	9377	9549	9773	10012	10239	10421	10663	10893	11144	11342	11628	12059	12429	12858	13383	13938		
	TOFL(SLUSH) ~ FT	8423	8622	8766	8979	9193	9343	9558	9753	9999	10261	10470							
	TOFL(WET SNOW) ~ FT	8158	8296	8436	8578	8722	8867	9011	9155	9302	9458	9656							
	TOFL(DRY SNOW) ~ FT	8212	8352	8494	8638	8784	8930	9076	9222	9372	9529	9728							
25,000 lb **11,340 kg**	V_1=V_R ~ KIAS	122	122	122	122	122	122	122	122	122	122	122	122	123	123	123	123	123	
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	132	131	130	130	129	
	TOFL(STANDING WATER) ~ FT	8833	9052	9278	9491	9655	9885	10104	10327	10517	10738	11035	11355	11701	12128	12537	13026	13673	
	TOFL(SLUSH) ~ FT	7980	8176	8313	8517	8712	8858	9063	9206	9415	9578	9881							
	TOFL(WET SNOW) ~ FT	7792	7924	8057	8192	8329	8466	8603	8739	8879	9018	9210							
	TOFL(DRY SNOW) ~ FT	7847	7981	8117	8254	8393	8532	8671	8809	8950	9091	9286							
24,000 lb **10,886 kg**	V_1=V_R ~ KIAS	119	119	119	119	119	119	119	119	119	119	119	119	120	120	120	120	120	
	V_2 ~ KIAS	131	131	131	131	131	130	130	130	130	130	130	130	129	129	128	127	126	
	TOFL(STANDING WATER) ~ FT	8376	8586	8787	8947	9165	9373	9537	9751	9964	10132	10407	10768	11061	11386	11767	12263	12767	
	TOFL(SLUSH) ~ FT	7555	7743	7879	8075	8222	8404	8595	8730	8930	9067	9314							
	TOFL(WET SNOW) ~ FT	7445	7571	7699	7827	7957	8087	8217	8346	8478	8610	8787							
	TOFL(DRY SNOW) ~ FT	7502	7630	7760	7891	8023	8155	8287	8418	8552	8685	8864							
23,000 lb **10,433 kg**	V_1=V_R ~ KIAS	115	115	115	115	115	115	115	115	115	115	116	116	116	116	117	117	117	117
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	127	127	126	125	124	123	122
	TOFL(STANDING WATER) ~ FT	7940	8120	8254	8459	8669	8808	9018	9217	9375	9598	9839	10115	10376	10661	11041	11421	11862	12350
	TOFL(SLUSH) ~ FT	7024	7142	7419	7625	7753	7943	8066	8257	8382	8578	8747							
	TOFL(WET SNOW) ~ FT	7094	7214	7335	7457	7580	7703	7825	7948	8072	8203	8370							
	TOFL(DRY SNOW) ~ FT	7151	7274	7397	7521	7646	7771	7896	8020	8146	8279	8448							
22,000 lb **9979 kg**	V_1=V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	114	114	114	114	114	114	114
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	125	125	124	123	122	121	120
	TOFL(STANDING WATER) ~ FT	7585	7782	7980	8087	8289	8421	8623	8807	8956	9163	9388	9639	9882	10140	10424	10821	11220	11628
	TOFL(SLUSH) ~ FT	6765	6883	6997	7115	7407	7591	7773	7894	8076	8199	8415							
	TOFL(WET SNOW) ~ FT	6842	6958	7074	7192	7310	7427	7545	7662	7780	7899	8049							
	TOFL(DRY SNOW) ~ FT	6901	7019	7138	7257	7377	7497	7617	7736	7856	7977	8128							
21,000 lb **9525 kg**	V_1=V_R ~ KIAS	113	113	113	113	113	113	113	113	113	113	113	112	111	111	111	112	112	112
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	124	123	122	121	120	119	118
	TOFL(STANDING WATER) ~ FT	7484	7673	7799	7993	8174	8300	8501	8631	8832	9023	9189	9259	9378	9623	9878	10170	10522	10891
	TOFL(SLUSH) ~ FT	6686	6802	6915	7031	7318	7498	7677	7795	7974	8094	8296							
	TOFL(WET SNOW) ~ FT	6768	6882	6997	7113	7229	7345	7460	7576	7692	7808	7945							
	TOFL(DRY SNOW) ~ FT	6829	6946	7063	7181	7299	7418	7535	7653	7771	7890	8028							
20,000 lb **9072 kg**	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	108	109	109	109	109
	V_2 ~ KIAS	126	126	127	126	126	126	126	126	126	126	126	124	121	120	119	118	117	116
	TOFL(STANDING WATER) ~ FT	7407	7599	7781	7915	8094	8219	8417	8546	8744	8932	9094	9134	8986	9080	9301	9568	9875	10200
	TOFL(SLUSH) ~ FT	6637	6752	6863	7124	7323	7437	7615	7781	7908	8029	8220							
	TOFL(WET SNOW) ~ FT	6722	6836	6950	7065	7180	7294	7409	7523	7637	7752	7885							
	TOFL(DRY SNOW) ~ FT	6787	6904	7020	7137	7254	7371	7488	7604	7721	7838	7973							
19,000 lb **8618 kg**	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	106	106	106	106
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	126	126	124	121	118	116	116	115	114
	TOFL(STANDING WATER) ~ FT	7349	7525	7705	7838	8016	8139	8335	8462	8657	8786	9001	9035	8864	8663	8717	8945	9210	9488
	TOFL(SLUSH) ~ FT	6593	6705	6818	7088	7266	7437	7554	7725	7842	8015	8150							
	TOFL(WET SNOW) ~ FT	6681	6794	6907	7021	7134	7248	7361	7473	7586	7700	7830							
	TOFL(DRY SNOW) ~ FT	6749	6865	6980	7097	7213	7328	7444	7559	7675	7791	7922							
18,000 lb **8165 kg**	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	109	106	103	103	103	103
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	125	122	118	115	113	113	112
	TOFL(STANDING WATER) ~ FT	7280	7454	7630	7762	7940	8061	8254	8377	8572	8764	8909	8937	8758	8480	8277	8432	8656	8891
	TOFL(SLUSH) ~ FT	6550	6664	6902	7100	7228	7382	7545	7666	7778	7949	8080							
	TOFL(WET SNOW) ~ FT	6643	6756	6868	6981	7093	7205	7317	7429	7540	7652	7778							
	TOFL(DRY SNOW) ~ FT	6715	6830	6945	7060	7175	7290	7404	7519	7633	7747	7876							
17,000 lb **7711 kg**	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	111	108	106	103	101	101	101
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	127	125	122	118	115	112	110	109
	TOFL(STANDING WATER) ~ FT	7212	7384	7517	7689	7865	7985	8175	8312	8488	8627	8819	8841	8661	8377	8147	8006	8168	8370
	TOFL(SLUSH) ~ FT	6513	6675	6930	7051	7215	7328	7495	7607	7773	7887	8012							
	TOFL(WET SNOW) ~ FT	6610	6722	6833	6945	7056	7167	7278	7388	7498	7609	7732							
	TOFL(DRY SNOW) ~ FT	6686	6800	6914	7029	7143	7257	7370	7483	7596	7709	7835							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACTO004C

Table 48

Flaps 15° **Field Pressure Altitude (2000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	$V_1=V_R$ ~ KIAS	131	131	131	131	131	131	131	131	131	131	132	132	132	132				
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	140	139	139	138				
	TOFL(STANDING WATER) ~ FT	10746	10991	11256	11507	11787	12000	12281	12545	12838	13150	13466	13931	14402	15006				
	TOFL(SLUSH) ~ FT	9646	9891	10151	10353	10622	10895	11076	11348	11626	11836	12252							
	TOFL(WET SNOW) ~ FT	9143	9287	9446	9608	9779	9946	10115	10285	10465	10664	11041							
	TOFL(DRY SNOW) ~ FT	9190	9337	9498	9661	9834	10003	10174	10345	10524	10721	11092							
27,000 lb **12,247 kg**	$V_1=V_R$ ~ KIAS	128	128	128	128	128	128	128	128	128	128	129	129	129	129	129			
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	138	137	137	136	136	135			
	TOFL(STANDING WATER) ~ FT	10242	10489	10728	10986	11184	11444	11693	11968	12246	12484	12932	13332	13851	14184	14815			
	TOFL(SLUSH) ~ FT	9191	9408	9568	9825	10095	10344	10529	10790	11070	11269	11725							
	TOFL(WET SNOW) ~ FT	8776	8923	9076	9231	9387	9543	9700	9867	10036	10222	10574							
	TOFL(DRY SNOW) ~ FT	8829	8978	9133	9289	9447	9605	9765	9933	10104	10291	10637							
26,000 lb **11,793 kg**	$V_1=V_R$ ~ KIAS	125	125	125	125	125	125	125	125	125	125	126	126	126	126	126			
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	135	134	133	133			
	TOFL(STANDING WATER) ~ FT	9761	9985	10230	10417	10664	10900	11155	11356	11624	11892	12327	12672	13095	13604	14120			
	TOFL(SLUSH) ~ FT	8759	8968	9120	9341	9561	9760	10010	10275	10446	10721	11132							
	TOFL(WET SNOW) ~ FT	8428	8570	8716	8864	9014	9163	9313	9471	9632	9810	10132							
	TOFL(DRY SNOW) ~ FT	8485	8628	8777	8927	9079	9230	9382	9542	9705	9885	10204							
25,000 lb **11,340 kg**	$V_1=V_R$ ~ KIAS	122	122	122	122	122	122	122	122	122	122	123	123	123	123	123	123		
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	133	132	131	131	130	129		
	TOFL(STANDING WATER) ~ FT	9250	9419	9654	9880	10104	10284	10527	10752	11014	11226	11611	11938	12360	12754	13231	13845		
	TOFL(SLUSH) ~ FT	8304	8505	8644	8855	9062	9212	9425	9591	9875	10133	10460							
	TOFL(WET SNOW) ~ FT	8047	8182	8322	8463	8604	8746	8888	9031	9189	9358	9653							
	TOFL(DRY SNOW) ~ FT	8106	8243	8385	8528	8672	8815	8960	9105	9265	9436	9729							
24,000 lb **10,886 kg**	$V_1=V_R$ ~ KIAS	119	119	119	119	119	119	119	119	119	119	119	120	120	120	120	120	120	
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	130	129	128	127	127	126	
	TOFL(STANDING WATER) ~ FT	8714	8930	9155	9367	9536	9756	9973	10194	10397	10634	11019	11293	11614	11982	12449	12936	13498	
	TOFL(SLUSH) ~ FT	7868	8064	8198	8400	8592	8735	8939	9079	9300	9479	9868							
	TOFL(WET SNOW) ~ FT	7687	7816	7949	8083	8217	8352	8487	8622	8773	8928	9207							
	TOFL(DRY SNOW) ~ FT	7747	7879	8014	8150	8287	8423	8560	8698	8851	9008	9286							
23,000 lb **10,433 kg**	$V_1=V_R$ ~ KIAS	115	115	115	115	115	115	115	115	116	116	116	116	116	117	117	117	117	
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	128	127	126	125	125	124	123	
	TOFL(STANDING WATER) ~ FT	8235	8445	8644	8802	9017	9221	9383	9610	9822	10012	10343	10604	10886	11254	11609	12037	12548	
	TOFL(SLUSH) ~ FT	7262	7551	7745	7938	8066	8261	8390	8590	8790	8953	9208							
	TOFL(WET SNOW) ~ FT	7321	7445	7571	7698	7825	7952	8080	8214	8352	8505	8753							
	TOFL(DRY SNOW) ~ FT	7382	7508	7637	7766	7895	8024	8154	8291	8431	8586	8833							
22,000 lb **9979 kg**	$V_1=V_R$ ~ KIAS	113	113	113	113	113	113	113	113	113	113	114	114	114	114	114	114	115	115
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	126	125	124	123	122	122	121	120
	TOFL(STANDING WATER) ~ FT	7893	8072	8278	8414	8620	8817	8964	9174	9366	9554	9868	10105	10361	10636	11013	11398	11837	12310
	TOFL(SLUSH) ~ FT	6983	7100	7396	7586	7772	7897	8083	8209	8398	8545	8846							
	TOFL(WET SNOW) ~ FT	7059	7179	7300	7422	7544	7665	7787	7910	8033	8179	8409							
	TOFL(DRY SNOW) ~ FT	7121	7243	7367	7491	7615	7739	7863	7988	8113	8261	8491							
21,000 lb **9525 kg**	$V_1=V_R$ ~ KIAS	113	113	113	113	113	113	113	113	113	113	112	111	111	111	112	112	112	112
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125	123	122	121	120	119	119	118
	TOFL(STANDING WATER) ~ FT	7783	7978	8091	8292	8498	8633	8838	9034	9187	9411	9556	9597	9818	10076	10363	10703	11093	11570
	TOFL(SLUSH) ~ FT	6900	7018	7306	7492	7675	7798	7981	8105	8290	8428	8553							
	TOFL(WET SNOW) ~ FT	6981	7099	7219	7338	7458	7578	7698	7818	7939	8073	8196							
	TOFL(DRY SNOW) ~ FT	7046	7166	7289	7411	7533	7655	7778	7900	8024	8160	8281							
20,000 lb **9072 kg**	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	110	108	109	109	109	109	109
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125	122	120	119	118	117	117	116
	TOFL(STANDING WATER) ~ FT	7701	7899	8082	8211	8414	8547	8750	8943	9091	9314	9420	9280	9278	9508	9756	10045	10386	10765
	TOFL(SLUSH) ~ FT	6847	7031	7312	7430	7613	7751	7914	8064	8219	8351	8447							
	TOFL(WET SNOW) ~ FT	6932	7050	7169	7287	7406	7524	7643	7762	7881	8013	8106							
	TOFL(DRY SNOW) ~ FT	7001	7121	7242	7364	7485	7606	7727	7848	7970	8104	8195							
19,000 lb **8618 kg**	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	106	106	106	106	106
	V_2 ~ KIAS	127	127	127	127	127	127	126	126	126	126	125	122	119	117	116	115	114	114
	TOFL(STANDING WATER) ~ FT	7626	7821	8003	8131	8331	8463	8663	8844	8999	9218	9317	9153	8984	8914	9133	9393	9690	10006
	TOFL(SLUSH) ~ FT	6800	7070	7254	7429	7551	7727	7847	8025	8147	8338	8378							
	TOFL(WET SNOW) ~ FT	6888	7005	7122	7240	7357	7474	7592	7709	7827	7956	8042							
	TOFL(DRY SNOW) ~ FT	6960	7080	7200	7320	7440	7560	7680	7800	7920	8052	8137							
18,000 lb **8165 kg**	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	112	109	107	104	103	103	104	104
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	125	122	119	116	114	113	112	111
	TOFL(STANDING WATER) ~ FT	7564	7744	7922	8052	8249	8377	8577	8778	8908	9123	9215	9051	8863	8640	8616	8841	9094	9362
	TOFL(SLUSH) ~ FT	6809	7082	7200	7374	7519	7668	7784	7958	8078	8265	8348							
	TOFL(WET SNOW) ~ FT	6848	6964	7080	7197	7313	7429	7545	7661	7777	7903	7983							
	TOFL(DRY SNOW) ~ FT	6923	7042	7162	7281	7400	7519	7638	7756	7875	8004	8083							
17,000 lb **7711 kg**	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	112	111	109	107	104	101	101	101	101
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	127	126	123	119	116	113	111	110	109
	TOFL(STANDING WATER) ~ FT	7492	7669	7840	7975	8170	8295	8492	8636	8819	9029	9115	8951	8754	8465	8257	8321	8523	8748
	TOFL(SLUSH) ~ FT	6852	7033	7202	7319	7490	7607	7778	7896	8068	8194	8272							
	TOFL(WET SNOW) ~ FT	6811	6927	7043	7158	7273	7388	7503	7617	7732	7856	7929							
	TOFL(DRY SNOW) ~ FT	6891	7010	7129	7247	7365	7483	7600	7718	7835	7962	8034							

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STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

Table 49

Flaps 15° **Field Pressure Altitude (3000 feet)**

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	131	131	131	131	131	131	131	131	131	132	132	132	132	132				
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	140	139	139	138	138				
	TOFL(STANDING WATER) ~ FT	11238	11510	11777	12005	12288	12562	12854	13153	13364	13767	14223	14672	15257	15831				
	TOFL(SLUSH) ~ FT	10115	10359	10625	10902	11087	11365	11641	11773	12075	12535	12922							
	TOFL(WET SNOW) ~ FT	9449	9614	9782	9953	10126	10302	10480	10666	10862	11222	11596							
	TOFL(DRY SNOW) ~ FT	9500	9667	9837	10009	10184	10362	10539	10722	10920	11273	11638							
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	128	128	128	128	128	128	128	128	128	129	129	129	129	129				
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	138	137	137	136	136	135				
	TOFL(STANDING WATER) ~ FT	10710	10911	11177	11442	11706	11984	12263	12487	12771	13223	13500	13959	14433	15039				
	TOFL(SLUSH) ~ FT	9554	9816	10074	10336	10543	10806	11084	11271	11561	11911	12288							
	TOFL(WET SNOW) ~ FT	9063	9222	9383	9543	9714	9882	10050	10223	10413	10751	11091							
	TOFL(DRY SNOW) ~ FT	9118	9280	9442	9605	9778	9948	10118	10293	10482	10811	11146							
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	125	125	125	125	125	125	125	125	125	126	126	126	126	126	126			
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	135	134	133	133	132			
	TOFL(STANDING WATER) ~ FT	10150	10401	10656	10898	11166	11371	11638	11895	12185	12605	12947	13335	13845	14176	14808			
	TOFL(SLUSH) ~ FT	9105	9328	9503	9760	10023	10289	10460	10723	11008	11334	11731							
	TOFL(WET SNOW) ~ FT	8702	8854	9009	9162	9325	9486	9646	9811	9990	10298	10608							
	TOFL(DRY SNOW) ~ FT	8762	8917	9073	9229	9394	9557	9719	9886	10067	10373	10677							
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	122	122	122	122	122	122	122	122	122	123	123	123	123	123	123			
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	133	132	131	131	130	129			
	TOFL(STANDING WATER) ~ FT	9632	9850	10095	10280	10526	10771	11027	11279	11504	11880	12203	12594	12991	13449	14028			
	TOFL(SLUSH) ~ FT	8628	8841	8992	9211	9428	9610	9888	10150	10330	10715	11017							
	TOFL(WET SNOW) ~ FT	8306	8452	8598	8744	8891	9050	9202	9359	9528	9812	10089							
	TOFL(DRY SNOW) ~ FT	8368	8516	8665	8813	8963	9123	9278	9437	9608	9891	10164							
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	119	119	119	119	119	119	119	119	119	120	120	120	120	120	120		
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	130	129	128	128	127	126		
	TOFL(STANDING WATER) ~ FT	9120	9341	9527	9752	9974	10215	10409	10635	10899	11216	11548	11842	12214	12665	13122	13662		
	TOFL(SLUSH) ~ FT	8181	8385	8524	8733	8938	9097	9312	9479	9765	10127	10406							
	TOFL(WET SNOW) ~ FT	7933	8071	8210	8349	8489	8640	8785	8928	9089	9359	9607							
	TOFL(DRY SNOW) ~ FT	7996	8137	8279	8420	8562	8715	8863	9009	9171	9441	9685							
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	115	115	115	115	115	116	116	116	116	116	116	116	117	117	117	117	117	
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	128	127	126	126	125	124	123	122	
	TOFL(STANDING WATER) ~ FT	8566	8784	9007	9214	9390	9621	9834	10013	10266	10591	10846	11108	11482	11823	12223	12703	13320	
	TOFL(SLUSH) ~ FT	7728	7923	8058	8258	8397	8601	8805	8954	9176	9427	9671							
	TOFL(WET SNOW) ~ FT	7554	7685	7817	7949	8088	8226	8364	8505	8658	8899	9118							
	TOFL(DRY SNOW) ~ FT	7618	7752	7887	8021	8162	8302	8442	8586	8741	8982	9199							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	113	113	113	113	113	113	113	113	113	114	114	114	114	114	114	114	115	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	126	125	124	124	123	122	121	120	
	TOFL(STANDING WATER) ~ FT	8186	8396	8610	8808	8970	9186	9376	9558	9776	10108	10329	10577	10860	11227	11586	12007	12484	
	TOFL(SLUSH) ~ FT	7372	7573	7703	7893	8084	8215	8406	8546	8759	8992	9200							
	TOFL(WET SNOW) ~ FT	7282	7409	7535	7661	7788	7915	8041	8179	8325	8550	8751							
	TOFL(DRY SNOW) ~ FT	7348	7477	7606	7734	7864	7993	8121	8262	8410	8635	8834							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	113	113	113	113	113	113	113	113	113	112	111	111	111	112	112	112	112	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	123	122	121	121	120	119	118	
	TOFL(STANDING WATER) ~ FT	8076	8277	8487	8627	8838	9038	9194	9410	9619	9776	9822	10033	10282	10573	10893	11324	11760	
	TOFL(SLUSH) ~ FT	7285	7479	7661	7794	7981	8109	8297	8427	8624	8763	8743							
	TOFL(WET SNOW) ~ FT	7200	7325	7450	7574	7698	7823	7947	8072	8207	8340	8377							
	TOFL(DRY SNOW) ~ FT	7269	7396	7524	7650	7778	7905	8031	8159	8296	8428	8462							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	108	109	109	109	109	109	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	122	120	119	118	118	117	116	
	TOFL(STANDING WATER) ~ FT	7989	8195	8403	8541	8749	8946	9098	9313	9507	9636	9532	9441	9719	9955	10235	10563	10956	
	TOFL(SLUSH) ~ FT	7230	7416	7603	7727	7914	8043	8226	8350	8544	8654	8537							
	TOFL(WET SNOW) ~ FT	7149	7273	7397	7520	7643	7766	7888	8012	8144	8248	8187							
	TOFL(DRY SNOW) ~ FT	7222	7348	7475	7600	7726	7852	7977	8103	8238	8341	8275							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	108	106	106	106	106	106	
	V_2 ~ KIAS	127	127	127	126	126	126	126	126	126	125	122	120	117	116	115	115	114	
	TOFL(STANDING WATER) ~ FT	7910	8114	8319	8453	8661	8799	9006	9218	9363	9474	9405	9238	9127	9339	9583	9868	10183	
	TOFL(SLUSH) ~ FT	7235	7390	7540	7721	7847	8029	8153	8337	8470	8573	8442							
	TOFL(WET SNOW) ~ FT	7102	7225	7347	7469	7591	7713	7833	7955	8086	8183	8108							
	TOFL(DRY SNOW) ~ FT	7179	7304	7429	7554	7679	7803	7927	8051	8185	8281	8202							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112	110	107	105	103	103	103	104	
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	125	123	120	117	114	113	112	112	
	TOFL(STANDING WATER) ~ FT	7849	8035	8237	8370	8575	8711	8915	9123	9263	9371	9301	9125	8945	8820	9031	9275	9556	
	TOFL(SLUSH) ~ FT	7180	7356	7480	7659	7782	7961	8084	8264	8395	8492	8399							
	TOFL(WET SNOW) ~ FT	7060	7181	7303	7423	7543	7664	7783	7903	8032	8123	8045							
	TOFL(DRY SNOW) ~ FT	7140	7264	7389	7512	7636	7759	7881	8004	8136	8226	8144							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	111	109	107	105	102	101	101	101	
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	127	126	123	120	117	114	111	110	109	
	TOFL(STANDING WATER) ~ FT	7771	7957	8157	8288	8490	8638	8825	9030	9168	9267	9197	9022	8826	8547	8497	8705	8940	
	TOFL(SLUSH) ~ FT	7174	7303	7478	7601	7776	7899	8074	8194	8322	8414	8341							
	TOFL(WET SNOW) ~ FT	7021	7142	7262	7381	7501	7620	7738	7856	7983	8067	7987							
	TOFL(DRY SNOW) ~ FT	7106	7230	7353	7476	7598	7720	7841	7963	8092	8176	8092							

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Table 50

Flaps 15° **Field Pressure Altitude (4000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	$V_1=V_R$ ~ KIAS	131	131	131	131	131	131	131	132	132	132	132	132	132					
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	140	139	139	138	138					
	TOFL(STANDING WATER) ~ FT	11714	12007	12299	12579	12880	13173	13367	13684	14068	14546	14990	15528	16091					
	TOFL(SLUSH) ~ FT	10616	10910	11100	11383	11668	11793	12078	12384	12748	13227	13645							
	TOFL(WET SNOW) ~ FT	9777	9961	10139	10321	10507	10686	10865	11070	11420	11937	12413							
	TOFL(DRY SNOW) ~ FT	9831	10017	10196	10380	10565	10742	10923	11127	11471	11835	12231							
27,000 lb 12,247 kg	$V_1=V_R$ ~ KIAS	128	128	128	128	128	128	128	129	129	129	129	129	129					
	V_2 ~ KIAS	138	138	138	138	138	138	138	138	137	137	137	136	135					
	TOFL(STANDING WATER) ~ FT	11167	11435	11715	11999	12282	12505	12793	13086	13431	13811	14264	14772	15304					
	TOFL(SLUSH) ~ FT	10070	10287	10554	10823	11109	11289	11564	11859	12141	12565	12966							
	TOFL(WET SNOW) ~ FT	9380	9556	9726	9899	10075	10242	10416	10614	10939	11282	11653							
	TOFL(DRY SNOW) ~ FT	9439	9616	9789	9964	10142	10311	10485	10679	11002	11336	11697							
26,000 lb 11,793 kg	$V_1=V_R$ ~ KIAS	125	125	125	125	125	125	125	125	126	126	126	126	126	126				
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	135	134	134	133	132				
	TOFL(STANDING WATER) ~ FT	10632	10904	11166	11384	11660	11912	12188	12486	12842	13249	13634	13972	14441	15045				
	TOFL(SLUSH) ~ FT	9483	9753	10032	10288	10483	10740	11010	11208	11616	11944	12314							
	TOFL(WET SNOW) ~ FT	9003	9172	9335	9501	9669	9828	9992	10176	10481	10795	11130							
	TOFL(DRY SNOW) ~ FT	9067	9238	9403	9571	9741	9903	10069	10255	10556	10862	11188							
25,000 lb 11,340 kg	$V_1=V_R$ ~ KIAS	122	122	122	122	122	122	122	122	123	123	123	123	123	123	123			
	V_2 ~ KIAS	133	133	133	133	133	133	133	133	133	132	132	131	130	130	129			
	TOFL(STANDING WATER) ~ FT	10022	10283	10538	10784	11048	11295	11507	11772	12165	12493	12883	13245	13767	14257	14639			
	TOFL(SLUSH) ~ FT	8983	9213	9433	9624	9909	10166	10332	10603	10993	11291	11604							
	TOFL(WET SNOW) ~ FT	8589	8750	8906	9064	9223	9375	9530	9704	9984	10264	10561							
	TOFL(DRY SNOW) ~ FT	8655	8818	8976	9137	9298	9452	9610	9786	10065	10342	10634							
24,000 lb 10,886 kg	$V_1=V_R$ ~ KIAS	119	119	119	119	119	119	119	119	119	120	120	120	120	120	120			
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	130	129	129	128	127	126			
	TOFL(STANDING WATER) ~ FT	9505	9737	9985	10169	10421	10650	10901	11179	11488	11826	12119	12516	12915	13350	13929			
	TOFL(SLUSH) ~ FT	8513	8737	8916	9105	9326	9493	9766	10043	10318	10666	10949							
	TOFL(WET SNOW) ~ FT	8194	8353	8502	8647	8798	8943	9090	9261	9523	9774	10040							
	TOFL(DRY SNOW) ~ FT	8262	8423	8574	8722	8876	9022	9173	9346	9607	9855	10118							
23,000 lb 10,433 kg	$V_1=V_R$ ~ KIAS	115	116	116	116	116	116	116	116	116	116	116	116	117	117	117	117		
	V_2 ~ KIAS	128	128	128	128	128	128	128	128	128	127	126	126	125	124	124	123		
	TOFL(STANDING WATER) ~ FT	8973	9158	9391	9631	9851	10027	10268	10508	10852	11097	11375	11723	12066	12450	12971	13493		
	TOFL(SLUSH) ~ FT	8042	8258	8404	8612	8819	8967	9177	9357	9698	9956	10203							
	TOFL(WET SNOW) ~ FT	7801	7952	8094	8237	8381	8519	8659	8816	9055	9278	9514							
	TOFL(DRY SNOW) ~ FT	7870	8023	8167	8313	8459	8600	8743	8902	9141	9362	9595							
22,000 lb 9979 kg	$V_1=V_R$ ~ KIAS	113	113	113	113	113	113	113	113	114	114	114	114	114	114	114	115	115	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	126	125	124	124	123	122	121	121	120	
	TOFL(STANDING WATER) ~ FT	8591	8742	8962	9172	9410	9579	9793	10035	10299	10586	10820	11097	11467	11808	12204	12690	13293	
	TOFL(SLUSH) ~ FT	7685	7885	8081	8217	8425	8558	8761	8916	9211	9427	9665							
	TOFL(WET SNOW) ~ FT	7519	7652	7785	7917	8060	8192	8327	8477	8699	8905	9119							
	TOFL(DRY SNOW) ~ FT	7589	7725	7860	7994	8139	8274	8412	8564	8787	8992	9203							
21,000 lb 9525 kg	$V_1=V_R$ ~ KIAS	113	113	113	113	113	113	113	113	112	111	111	111	112	112	112	112	112	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	122	122	121	120	119	118	117	
	TOFL(STANDING WATER) ~ FT	8396	8612	8832	9035	9201	9417	9618	9791	10024	10010	10283	10514	10808	11113	11526	11941	12409	
	TOFL(SLUSH) ~ FT	7587	7784	7977	8111	8304	8435	8624	8766	8917	8962	9163							
	TOFL(WET SNOW) ~ FT	7432	7564	7694	7824	7954	8079	8207	8343	8489	8527	8720							
	TOFL(DRY SNOW) ~ FT	7506	7640	7773	7905	8037	8166	8296	8435	8580	8615	8807							
20,000 lb 9072 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	110	109	109	109	109	109	109	109	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	120	120	119	118	117	117	116	
	TOFL(STANDING WATER) ~ FT	8312	8525	8742	8887	9104	9320	9511	9686	9816	9780	9695	9883	10186	10453	10762	11144	11563	
	TOFL(SLUSH) ~ FT	7582	7716	7906	8038	8229	8357	8544	8684	8801	8772	8680							
	TOFL(WET SNOW) ~ FT	7379	7509	7638	7766	7894	8019	8144	8279	8391	8357	8321							
	TOFL(DRY SNOW) ~ FT	7456	7588	7720	7851	7982	8110	8238	8375	8487	8449	8409							
19,000 lb 8618 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	106	106	106	106	107	
	V_2 ~ KIAS	126	126	126	126	126	126	126	126	125	123	120	118	117	116	115	114	113	
	TOFL(STANDING WATER) ~ FT	8292	8440	8653	8797	9010	9224	9363	9585	9709	9648	9521	9405	9563	9797	10056	10426	10795	
	TOFL(SLUSH) ~ FT	7522	7703	7841	8028	8159	8344	8470	8662	8779	8675	8534							
	TOFL(WET SNOW) ~ FT	7329	7457	7585	7712	7838	7962	8086	8218	8324	8275	8192							
	TOFL(DRY SNOW) ~ FT	7410	7541	7672	7802	7931	8058	8185	8320	8426	8373	8285							
18,000 lb 8165 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	112	110	108	106	104	103	103	104	104	
	V_2 ~ KIAS	127	127	127	127	127	126	126	126	125	123	120	118	115	114	113	112	111	
	TOFL(STANDING WATER) ~ FT	8162	8355	8566	8708	8918	9129	9267	9485	9600	9532	9403	9238	9102	9243	9473	9745	10059	
	TOFL(SLUSH) ~ FT	7461	7647	7776	7959	8088	8270	8395	8588	8694	8590	8448							
	TOFL(WET SNOW) ~ FT	7284	7410	7537	7662	7787	7909	8032	8162	8263	8210	8125							
	TOFL(DRY SNOW) ~ FT	7369	7499	7628	7757	7885	8010	8136	8269	8369	8313	8223							
17,000 lb 7711 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	112	111	110	108	105	103	101	101	101	101	
	V_2 ~ KIAS	127	127	127	127	127	127	127	127	126	123	121	118	115	112	110	110	109	
	TOFL(STANDING WATER) ~ FT	8082	8272	8480	8618	8827	9035	9169	9386	9496	9377	9296	9122	8931	8776	8896	9128	9399	
	TOFL(SLUSH) ~ FT	7449	7588	7769	7893	8058	8199	8322	8538	8639	8508	8427							
	TOFL(WET SNOW) ~ FT	7242	7368	7493	7617	7741	7862	7983	8111	8206	8151	8063							
	TOFL(DRY SNOW) ~ FT	7333	7461	7589	7717	7844	7968	8093	8224	8318	8260	8167							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACTO004C

Table 51

Flaps 15°   Field Pressure Altitude (5000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	$V_1=V_R$ ~ KIAS	131	132	132	132	132	132	132	132	132	132	132	132						
	V_2 ~ KIAS	140	140	140	140	140	140	140	140	139	139	138	138						
	TOFL(STANDING WATER) ~ FT	12282	12602	12904	13225	13413	13712	14059	14399	14891	15424	15882	16479						
	TOFL(SLUSH) ~ FT	11101	11407	11692	11842	12121	12405	12718	13062	13532	13991	14520							
	TOFL(WET SNOW) ~ FT	10140	10343	10529	10734	10908	11087	11316	11767	12233	12674	13183							
	TOFL(DRY SNOW) ~ FT	10197	10402	10588	10789	10965	11144	11369	11674	12048	12463	12889							
27,000 lb 12,247 kg	$V_1=V_R$ ~ KIAS	128	128	128	129	129	129	129	129	129	129	129	129	129					
	V_2 ~ KIAS	138	138	138	138	138	138	138	137	137	137	136	136	135					
	TOFL(STANDING WATER) ~ FT	11715	12021	12308	12555	12839	13108	13349	13749	14144	14621	15128	15592	16265					
	TOFL(SLUSH) ~ FT	10556	10845	11132	11337	11607	11878	12049	12442	12805	13301	13715							
	TOFL(WET SNOW) ~ FT	9728	9921	10097	10288	10457	10631	10845	11135	11487	11953	12423							
	TOFL(DRY SNOW) ~ FT	9790	9985	10164	10356	10526	10697	10912	11197	11542	11922	12314							
26,000 lb 11,793 kg	$V_1=V_R$ ~ KIAS	125	125	125	126	126	126	126	126	126	126	126	126	126					
	V_2 ~ KIAS	135	135	135	135	135	135	135	135	135	134	134	133	133					
	TOFL(STANDING WATER) ~ FT	11113	11406	11684	11959	12232	12509	12831	13133	13571	13930	14307	14810	15335					
	TOFL(SLUSH) ~ FT	10016	10310	10505	10786	11052	11227	11534	11903	12184	12615	13011							
	TOFL(WET SNOW) ~ FT	9338	9522	9691	9873	10033	10195	10401	10669	10993	11349	11707							
	TOFL(DRY SNOW) ~ FT	9406	9592	9763	9947	10110	10274	10480	10743	11060	11406	11757							
25,000 lb 11,340 kg	$V_1=V_R$ ~ KIAS	122	122	122	122	122	122	122	122	123	123	123	123	123	123				
	V_2 ~ KIAS	133	133	133	133	133	133	133	132	132	132	131	130	130	129				
	TOFL(STANDING WATER) ~ FT	10525	10805	11071	11347	11549	11795	12101	12461	12783	13216	13571	14044	14386	14985				
	TOFL(SLUSH) ~ FT	9379	9645	9915	10193	10372	10623	10926	11185	11577	11917	12255							
	TOFL(WET SNOW) ~ FT	8909	9084	9245	9417	9569	9723	9916	10162	10450	10772	11096							
	TOFL(DRY SNOW) ~ FT	8980	9157	9320	9494	9649	9806	10001	10246	10531	10846	11160							
24,000 lb 10,886 kg	$V_1=V_R$ ~ KIAS	119	119	119	119	119	119	119	119	119	120	120	120	120	120	120			
	V_2 ~ KIAS	130	130	130	130	130	130	130	130	130	129	129	128	127	127	126			
	TOFL(STANDING WATER) ~ FT	9983	10189	10444	10699	10949	11203	11488	11749	12120	12439	12837	13186	13629	14194	14763			
	TOFL(SLUSH) ~ FT	8887	9124	9348	9541	9811	10067	10313	10583	10857	11258	11564							
	TOFL(WET SNOW) ~ FT	8501	8666	8819	8989	9134	9282	9464	9690	9952	10240	10528							
	TOFL(DRY SNOW) ~ FT	8573	8741	8897	9069	9217	9367	9552	9778	10037	10322	10605							
23,000 lb 10,433 kg	$V_1=V_R$ ~ KIAS	116	116	116	116	116	116	116	116	116	116	117	117	117	117	117			
	V_2 ~ KIAS	128	128	128	128	128	128	128	127	127	126	126	125	125	124	123			
	TOFL(STANDING WATER) ~ FT	9396	9636	9873	10119	10308	10532	10810	11056	11378	11681	12023	12330	12791	13226	13711			
	TOFL(SLUSH) ~ FT	8409	8632	8807	9007	9215	9378	9654	9945	10235	10505	10831							
	TOFL(WET SNOW) ~ FT	8098	8256	8402	8557	8696	8837	9009	9213	9447	9706	9960							
	TOFL(DRY SNOW) ~ FT	8172	8332	8481	8638	8780	8923	9099	9302	9535	9791	10041							
22,000 lb 9979 kg	$V_1=V_R$ ~ KIAS	113	113	113	113	113	113	113	114	114	114	114	114	114	114	115	115		
	V_2 ~ KIAS	126	126	126	126	126	126	126	125	125	125	124	123	122	122	121	120		
	TOFL(STANDING WATER) ~ FT	8961	9197	9433	9619	9841	10051	10328	10556	10858	11117	11388	11727	12075	12460	12984	13490		
	TOFL(SLUSH) ~ FT	8017	8241	8447	8597	8798	8938	9173	9387	9706	9978	10218							
	TOFL(WET SNOW) ~ FT	7785	7940	8081	8230	8363	8499	8664	8852	9069	9305	9535							
	TOFL(DRY SNOW) ~ FT	7859	8018	8161	8312	8449	8587	8755	8943	9159	9394	9620							
21,000 lb 9525 kg	$V_1=V_R$ ~ KIAS	113	113	113	113	113	113	113	111	111	111	111	111	112	112	112	112		
	V_2 ~ KIAS	126	126	126	126	126	125	125	124	123	122	122	121	120	119	119	118		
	TOFL(STANDING WATER) ~ FT	8832	8987	9215	9442	9648	9816	10062	10116	10272	10568	10797	11064	11436	11778	12174	12636		
	TOFL(SLUSH) ~ FT	7978	8119	8318	8459	8652	8788	9007	9056	9190	9411	9631							
	TOFL(WET SNOW) ~ FT	7695	7832	7967	8103	8234	8365	8516	8558	8685	8899	9107							
	TOFL(DRY SNOW) ~ FT	7774	7913	8051	8189	8323	8457	8610	8652	8777	8989	9196							
20,000 lb 9072 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	111	110	109	109	109	109	109	109	109		
	V_2 ~ KIAS	126	126	126	126	126	126	126	124	122	120	120	119	118	117	117	116		
	TOFL(STANDING WATER) ~ FT	8743	8896	9118	9345	9547	9715	9957	9978	9914	9976	10157	10438	10712	11011	11377	11842		
	TOFL(SLUSH) ~ FT	7908	8047	8243	8382	8572	8707	8922	8953	8886	8932	9107							
	TOFL(WET SNOW) ~ FT	7640	7775	7908	8042	8172	8302	8450	8475	8464	8506	8671							
	TOFL(DRY SNOW) ~ FT	7722	7860	7997	8133	8266	8399	8550	8573	8559	8599	8761							
19,000 lb 8618 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	106	106	106	106	106		
	V_2 ~ KIAS	126	126	126	126	126	126	126	124	122	120	118	117	116	115	114	114		
	TOFL(STANDING WATER) ~ FT	8656	8807	9026	9249	9394	9613	9853	9872	9797	9773	9698	9814	10044	10359	10667	11017		
	TOFL(SLUSH) ~ FT	7844	8010	8174	8365	8499	8692	8856	8868	8789	8781	8689							
	TOFL(WET SNOW) ~ FT	7588	7721	7854	7986	8114	8243	8388	8410	8387	8374	8338							
	TOFL(DRY SNOW) ~ FT	7675	7811	7947	8081	8214	8346	8494	8514	8488	8471	8431							
18,000 lb 8165 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	104	103	103	104	104		
	V_2 ~ KIAS	127	126	126	126	126	126	126	125	122	120	118	115	114	113	112	111		
	TOFL(STANDING WATER) ~ FT	8570	8716	8935	9154	9298	9515	9751	9767	9687	9663	9520	9395	9478	9721	9982	10274		
	TOFL(SLUSH) ~ FT	7781	7971	8105	8296	8425	8613	8790	8802	8746	8697	8550							
	TOFL(WET SNOW) ~ FT	7541	7673	7803	7934	8061	8189	8331	8351	8324	8306	8216							
	TOFL(DRY SNOW) ~ FT	7633	7767	7901	8035	8166	8297	8443	8460	8430	8410	8315							
17,000 lb 7711 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	112	111	109	108	106	103	102	101	101	101		
	V_2 ~ KIAS	127	127	127	127	127	127	127	125	123	121	118	115	113	111	110	109		
	TOFL(STANDING WATER) ~ FT	8486	8629	8845	9061	9201	9418	9624	9607	9583	9554	9412	9228	9099	9146	9370	9627		
	TOFL(SLUSH) ~ FT	7719	7905	8038	8225	8353	8567	8795	8737	8687	8613	8466							
	TOFL(WET SNOW) ~ FT	7499	7629	7758	7887	8014	8140	8280	8296	8266	8245	8153							
	TOFL(DRY SNOW) ~ FT	7596	7729	7862	7993	8124	8254	8397	8412	8379	8354	8258							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACTO004C

Table 52

Flaps 15°   Field Pressure Altitude (6000 feet)

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	$V_1=V_R$ ~ KIAS	131	131	132	132	132	132	132	132	132	132	132							
	V_2 ~ KIAS	140	140	140	140	140	140	139	139	139	138	138							
	TOFL(STANDING WATER) ~ FT	12809	13160	13403	13753	14087	14446	14784	15271	15817	16285	16870							
	TOFL(SLUSH) ~ FT	11599	11779	12110	12445	12742	13015	13430	13817	14363	14894	15393							
	TOFL(WET SNOW) ~ FT	10438	10671	10896	11126	11341	11773	12107	12563	12998	13516	13997							
	TOFL(DRY SNOW) ~ FT	10499	10728	10954	11182	11392	11629	11929	12294	12717	13148	13614							
27,000 lb 12,247 kg	$V_1=V_R$ ~ KIAS	128	128	129	129	129	129	129	129	129	129	129	129						
	V_2 ~ KIAS	138	138	138	138	138	137	137	137	137	136	136	135						
	TOFL(STANDING WATER) ~ FT	12212	12495	12830	13149	13377	13721	14119	14575	15000	15516	15973	16583						
	TOFL(SLUSH) ~ FT	10958	11278	11597	11917	12074	12405	12775	13151	13638	14080	14604							
	TOFL(WET SNOW) ~ FT	10013	10231	10448	10669	10868	11096	11379	11866	12348	12756	13276							
	TOFL(DRY SNOW) ~ FT	10082	10300	10517	10735	10936	11161	11441	11778	12167	12564	12986							
26,000 lb 11,793 kg	$V_1=V_R$ ~ KIAS	125	125	125	126	126	126	126	126	126	126	126	126	126					
	V_2 ~ KIAS	135	135	135	135	135	135	135	134	134	134	133	133	132					
	TOFL(STANDING WATER) ~ FT	11585	11905	12225	12549	12860	13190	13482	13822	14296	14685	15179	15653	16315					
	TOFL(SLUSH) ~ FT	10426	10732	11045	11278	11559	11876	12088	12516	12892	13342	13766							
	TOFL(WET SNOW) ~ FT	9614	9821	10025	10231	10426	10640	10895	11220	11585	11951	12484							
	TOFL(DRY SNOW) ~ FT	9687	9896	10103	10311	10505	10716	10967	11286	11643	11999	12380							
25,000 lb 11,340 kg	$V_1=V_R$ ~ KIAS	122	122	122	122	122	122	122	123	123	123	123	123	123					
	V_2 ~ KIAS	133	133	133	133	133	133	132	132	132	131	131	130	129					
	TOFL(STANDING WATER) ~ FT	10998	11300	11545	11853	12130	12442	12800	13122	13569	13821	14271	14697	15294					
	TOFL(SLUSH) ~ FT	9840	10145	10367	10660	10952	11160	11507	11807	12186	12524	12956							
	TOFL(WET SNOW) ~ FT	9174	9370	9564	9759	9941	10138	10380	10667	11002	11329	11681							
	TOFL(DRY SNOW) ~ FT	9251	9449	9645	9842	10027	10225	10466	10747	11073	11393	11734							
24,000 lb 10,886 kg	$V_1=V_R$ ~ KIAS	119	119	119	119	119	119	119	119	120	120	120	120	120	120				
	V_2 ~ KIAS	130	130	130	130	130	130	130	129	129	129	128	127	127	126				
	TOFL(STANDING WATER) ~ FT	10378	10650	10947	11241	11525	11760	12072	12444	12777	13186	13530	14010	14345	14858				
	TOFL(SLUSH) ~ FT	9275	9492	9808	10103	10347	10568	10870	11173	11553	11890	12220							
	TOFL(WET SNOW) ~ FT	8756	8942	9131	9316	9490	9677	9897	10156	10455	10749	11064							
	TOFL(DRY SNOW) ~ FT	8835	9022	9215	9402	9578	9767	9987	10244	10540	10830	11135							
23,000 lb 10,433 kg	$V_1=V_R$ ~ KIAS	116	116	116	116	116	116	116	116	117	117	117	117	117	117	117			
	V_2 ~ KIAS	128	128	128	128	128	128	127	127	126	126	125	125	124	123	123			
	TOFL(STANDING WATER) ~ FT	9814	10083	10308	10588	10840	11118	11347	11686	12004	12356	12663	13093	13520	13998	14637			
	TOFL(SLUSH) ~ FT	8721	8970	9214	9413	9681	9950	10194	10507	10810	11084	11447							
	TOFL(WET SNOW) ~ FT	8345	8521	8696	8871	9036	9207	9408	9641	9911	10172	10447							
	TOFL(DRY SNOW) ~ FT	8424	8603	8780	8958	9126	9299	9499	9731	10000	10257	10528							
22,000 lb 9979 kg	$V_1=V_R$ ~ KIAS	113	113	113	113	113	113	114	114	114	114	114	114	114	114	115	115		
	V_2 ~ KIAS	126	126	126	126	126	126	125	125	125	124	123	123	122	121	120	120		
	TOFL(STANDING WATER) ~ FT	9310	9585	9843	10097	10348	10561	10831	11147	11429	11709	12046	12361	12827	13254	13744	14407		
	TOFL(SLUSH) ~ FT	8394	8564	8799	8973	9204	9468	9676	9983	10286	10534	10851							
	TOFL(WET SNOW) ~ FT	8029	8198	8365	8533	8691	8853	9038	9256	9504	9740	9988							
	TOFL(DRY SNOW) ~ FT	8110	8281	8451	8621	8783	8946	9132	9349	9596	9830	10075							
21,000 lb 9525 kg	$V_1=V_R$ ~ KIAS	113	113	113	113	113	112	111	111	111	112	112	112	112	112	112	112		
	V_2 ~ KIAS	126	126	126	125	125	125	123	123	122	122	121	120	120	119	118	117		
	TOFL(STANDING WATER) ~ FT	9178	9424	9655	9847	10099	10257	10322	10539	10869	11107	11372	11718	12061	12443	12965	13459		
	TOFL(SLUSH) ~ FT	8282	8441	8658	8818	9038	9127	9182	9377	9721	9955	10205							
	TOFL(WET SNOW) ~ FT	7932	8086	8240	8394	8547	8628	8679	8865	9091	9306	9529							
	TOFL(DRY SNOW) ~ FT	8017	8173	8330	8487	8642	8724	8775	8960	9185	9399	9620							
20,000 lb 9072 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	111	109	109	109	109	109	109	109	109	109		
	V_2 ~ KIAS	126	126	126	126	126	125	123	122	120	120	119	118	118	117	116	116		
	TOFL(STANDING WATER) ~ FT	9086	9331	9558	9747	9992	10091	10127	10167	10276	10453	10736	10986	11307	11703	12093	12535		
	TOFL(SLUSH) ~ FT	8211	8367	8581	8737	8954	9055	9072	9106	9196	9366	9575							
	TOFL(WET SNOW) ~ FT	7878	8029	8181	8332	8482	8562	8586	8615	8701	8860	9061							
	TOFL(DRY SNOW) ~ FT	7967	8121	8275	8430	8583	8664	8687	8714	8798	8955	9154							
19,000 lb 8618 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	112	110	109	108	107	106	106	106	106	106	107		
	V_2 ~ KIAS	126	126	126	126	126	125	124	122	120	118	117	116	115	115	114	113		
	TOFL(STANDING WATER) ~ FT	8998	9239	9405	9645	9890	9987	10021	10038	10074	10006	10092	10313	10639	10929	11268	11654		
	TOFL(SLUSH) ~ FT	8147	8358	8509	8722	8890	8987	9001	9001	9026	8969	9048							
	TOFL(WET SNOW) ~ FT	7828	7976	8125	8274	8422	8500	8521	8532	8572	8548	8623							
	TOFL(DRY SNOW) ~ FT	7922	8073	8225	8377	8528	8607	8628	8636	8674	8646	8718							
18,000 lb 8165 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	111	110	109	108	106	104	103	103	104	104	104		
	V_2 ~ KIAS	127	126	126	126	126	125	124	122	120	118	116	114	113	112	112	111		
	TOFL(STANDING WATER) ~ FT	8912	9148	9312	9548	9789	9881	9913	9915	9949	9803	9717	9743	9985	10235	10526	10917		
	TOFL(SLUSH) ~ FT	8082	8289	8438	8647	8825	8968	8933	8917	8948	8817	8713							
	TOFL(WET SNOW) ~ FT	7782	7928	8075	8221	8367	8443	8462	8469	8492	8419	8372							
	TOFL(DRY SNOW) ~ FT	7882	8030	8180	8329	8479	8557	8575	8579	8600	8522	8471							
17,000 lb 7711 kg	$V_1=V_R$ ~ KIAS	112	112	112	112	112	111	110	109	108	106	104	102	101	101	101	101		
	V_2 ~ KIAS	127	127	127	127	127	126	124	122	121	118	116	113	111	110	109	109		
	TOFL(STANDING WATER) ~ FT	8827	9059	9217	9452	9689	9780	9810	9810	9781	9693	9544	9423	9412	9629	9879	10160		
	TOFL(SLUSH) ~ FT	8020	8222	8369	8601	8833	8913	8931	8865	8862	8734	8581							
	TOFL(WET SNOW) ~ FT	7742	7885	8030	8173	8318	8392	8409	8412	8431	8355	8259							
	TOFL(DRY SNOW) ~ FT	7846	7993	8141	8288	8435	8512	8528	8529	8545	8465	8364							

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STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

Table 53

Flaps 15° **Field Pressure Altitude (7000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	131	131	132	132	132	132	132	132	132	132								
	V_2 ~ KIAS	140	140	140	140	140	139	139	139	138	138								
	TOFL(STANDING WATER) ~ FT	13294	13611	14045	14481	14871	15217	15670	16189	16669	17287								
	TOFL(SLUSH) ~ FT	11899	12297	12696	13044	13423	13824	14197	14693	15163	15764								
	TOFL(WET SNOW) ~ FT	10686	10978	11289	11824	12097	12491	12840	13306	13758	14410								
	TOFL(DRY SNOW) ~ FT	10750	11039	11347	11657	11922	12226	12556	12948	13388	13879								
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	128	128	128	129	129	129	129	129	129	129	129							
	V_2 ~ KIAS	138	138	138	138	137	137	137	136	136	136	135							
	TOFL(STANDING WATER) ~ FT	12649	13015	13339	13754	14125	14530	14951	15362	15887	16459	16968							
	TOFL(SLUSH) ~ FT	11413	11778	12032	12434	12773	13094	13507	13969	14428	14981	15459							
	TOFL(WET SNOW) ~ FT	10269	10532	10826	11123	11375	11807	12193	12654	13072	13601	13782							
	TOFL(DRY SNOW) ~ FT	10345	10604	10896	11189	11438	11722	12020	12391	12795	13243	13713							
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	125	125	125	126	126	126	126	126	126	126	126	126						
	V_2 ~ KIAS	135	135	135	135	135	135	134	134	134	133	133	132						
	TOFL(STANDING WATER) ~ FT	12067	12426	12824	13226	13580	13790	14188	14637	15041	15567	16108	16638						
	TOFL(SLUSH) ~ FT	10886	11156	11522	11907	12159	12472	12843	13212	13675	14128	14651							
	TOFL(WET SNOW) ~ FT	9869	10110	10389	10671	10903	11172	11458	11830	12338	12814	13138							
	TOFL(DRY SNOW) ~ FT	9951	10193	10469	10746	10978	11242	11524	11853	12220	12627	13048							
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	122	122	122	122	122	122	122	123	123	123	123	123	123					
	V_2 ~ KIAS	133	133	133	133	132	132	132	131	131	131	130	130	129					
	TOFL(STANDING WATER) ~ FT	11472	11737	12100	12478	12814	13174	13473	13794	14160	14646	15139	15612	16264					
	TOFL(SLUSH) ~ FT	10285	10543	10919	11260	11515	11842	12139	12470	12841	13303	13708							
	TOFL(WET SNOW) ~ FT	9430	9645	9909	10168	10386	10634	10896	11199	11540	11917	12304							
	TOFL(DRY SNOW) ~ FT	9515	9731	9996	10256	10474	10715	10973	11272	11604	11972	12350							
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	119	119	119	119	119	119	120	120	120	120	120	120					
	V_2 ~ KIAS	131	130	130	130	130	130	129	129	128	128	128	127	126					
	TOFL(STANDING WATER) ~ FT	10829	11137	11499	11855	12089	12425	12779	13087	13512	13891	14230	14656	15243					
	TOFL(SLUSH) ~ FT	9687	9963	10321	10597	10898	11146	11488	11779	12174	12485	12842							
	TOFL(WET SNOW) ~ FT	9014	9214	9462	9705	9907	10129	10367	10642	10950	11295	11641							
	TOFL(DRY SNOW) ~ FT	9101	9302	9552	9796	9999	10221	10457	10730	11031	11364	11703							
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	115	115	116	116	116	116	116	116	116	117	117	117	117	117				
	V_2 ~ KIAS	128	128	128	128	127	127	127	126	126	125	125	124	124	123				
	TOFL(STANDING WATER) ~ FT	10194	10501	10818	11155	11440	11676	12002	12282	12666	13004	13425	13820	14373	14738				
	TOFL(SLUSH) ~ FT	9108	9309	9657	9983	10209	10510	10736	11066	11454	11761	12101							
	TOFL(WET SNOW) ~ FT	8593	8785	9013	9239	9423	9624	9840	10087	10360	10662	10970							
	TOFL(DRY SNOW) ~ FT	8681	8875	9104	9332	9516	9718	9933	10178	10448	10747	11049							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	113	113	113	114	114	114	114	114	114	114	114	114	114	115	115			
	V_2 ~ KIAS	126	126	126	126	125	125	125	124	124	123	123	122	121	121	120			
	TOFL(STANDING WATER) ~ FT	9763	10017	10330	10661	10856	11152	11396	11711	12007	12375	12685	13118	13545	14028	14661			
	TOFL(SLUSH) ~ FT	8726	8901	9184	9502	9718	9984	10226	10532	10813	11102	11416							
	TOFL(WET SNOW) ~ FT	8292	8463	8672	8886	9057	9247	9446	9672	9920	10196	10473							
	TOFL(DRY SNOW) ~ FT	8381	8554	8765	8980	9153	9343	9542	9767	10014	10286	10559							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	112	112	113	113	111	111	111	111	111	112	112	112	112	112	112	112		
	V_2 ~ KIAS	126	126	126	125	124	123	123	122	122	121	120	120	119	118	118	117		
	TOFL(STANDING WATER) ~ FT	9641	9885	10096	10355	10405	10550	10829	11080	11393	11689	12028	12344	12804	13234	13716	14288		
	TOFL(SLUSH) ~ FT	8622	8791	9032	9231	9259	9388	9677	9916	10220	10516	10779							
	TOFL(WET SNOW) ~ FT	8204	8370	8541	8718	8754	8863	9045	9254	9479	9729	9979							
	TOFL(DRY SNOW) ~ FT	8298	8466	8638	8816	8852	8961	9144	9352	9576	9823	10070							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	112	112	112	112	111	110	109	108	109	109	109	109	109	109	109	109		
	V_2 ~ KIAS	126	126	126	125	124	122	121	120	119	119	118	118	117	117	116	115		
	TOFL(STANDING WATER) ~ FT	9551	9790	9995	10229	10277	10306	10361	10485	10731	11041	11285	11635	11980	12358	12789	13360		
	TOFL(SLUSH) ~ FT	8553	8781	8955	9195	9167	9176	9225	9330	9542	9878	10128							
	TOFL(WET SNOW) ~ FT	8153	8314	8480	8633	8667	8684	8726	8824	9029	9253	9475							
	TOFL(DRY SNOW) ~ FT	8252	8415	8582	8737	8771	8786	8827	8924	9128	9351	9570							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	112	112	112	112	111	110	109	107	106	106	106	106	106	106	107	107		
	V_2 ~ KIAS	127	126	126	126	124	123	121	119	118	117	116	116	115	114	113	113		
	TOFL(STANDING WATER) ~ FT	9463	9638	9893	10124	10171	10198	10219	10173	10192	10385	10656	10910	11200	11533	11982	12409		
	TOFL(SLUSH) ~ FT	8485	8708	8905	9122	9162	9104	9116	9117	9076	9239	9504							
	TOFL(WET SNOW) ~ FT	8107	8263	8424	8571	8604	8619	8638	8635	8652	8808	9006							
	TOFL(DRY SNOW) ~ FT	8210	8369	8531	8681	8714	8727	8745	8739	8753	8908	9104							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	112	112	112	112	111	110	108	107	105	104	103	103	104	104	104	104		
	V_2 ~ KIAS	127	127	126	126	125	123	121	120	117	116	114	113	113	112	111	110		
	TOFL(STANDING WATER) ~ FT	9377	9548	9796	9962	10058	10033	10061	10052	10010	10001	10017	10252	10503	10849	11169	11534		
	TOFL(SLUSH) ~ FT	8474	8653	8830	9064	9103	9097	9045	9022	8933	8971	8979							
	TOFL(WET SNOW) ~ FT	8065	8217	8372	8515	8547	8560	8576	8562	8529	8559	8584							
	TOFL(DRY SNOW) ~ FT	8174	8328	8486	8631	8662	8674	8689	8672	8636	8663	8685							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	112	112	112	112	111	109	108	107	105	104	102	101	101	101	101	101		
	V_2 ~ KIAS	127	127	127	126	125	123	122	120	118	116	113	111	110	110	109	108		
	TOFL(STANDING WATER) ~ FT	9292	9455	9700	9861	9906	9930	9956	9946	9843	9808	9722	9679	9893	10128	10401	10710		
	TOFL(SLUSH) ~ FT	8422	8603	8841	8994	9023	9042	9031	8939	8849	8830	8727							
	TOFL(WET SNOW) ~ FT	8029	8176	8327	8465	8496	8507	8520	8503	8467	8443	8395							
	TOFL(DRY SNOW) ~ FT	8143	8293	8446	8586	8617	8628	8640	8621	8581	8553	8501							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACTO004C

Table 54

Flaps 15° **Field Pressure Altitude (8000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	131	131	132	132	132	132	132	132	132									
	V_2 ~ KIAS	140	140	140	139	139	139	139	138	138									
	TOFL(STANDING WATER) ~ FT	13942	14406	14856	15221	15670	16136	16619	17185	17801									
	TOFL(SLUSH) ~ FT	12588	12962	13402	13820	14185	14647	15084	15570	16185									
	TOFL(WET SNOW) ~ FT	11179	11736	12074	12485	12898	13235	13682	14153	14608									
	TOFL(DRY SNOW) ~ FT	11242	11577	11900	12222	12543	12881	13234	13669	14172									
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	128	128	129	129	129	129	129	129	129	129								
	V_2 ~ KIAS	138	138	137	137	137	136	136	136	136	135								
	TOFL(STANDING WATER) ~ FT	13351	13692	14115	14538	14963	15394	15774	16303	16890	17493								
	TOFL(SLUSH) ~ FT	11949	12363	12777	13157	13510	13911	14292	14799	15362	15871								
	TOFL(WET SNOW) ~ FT	10743	11051	11356	11826	12192	12587	12931	13416	13883	14166								
	TOFL(DRY SNOW) ~ FT	10815	11120	11422	11722	12021	12327	12663	13064	13524	14000								
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	125	125	126	126	126	126	126	126	126	126	126							
	V_2 ~ KIAS	135	135	135	135	134	134	134	133	133	133	132							
	TOFL(STANDING WATER) ~ FT	12753	13166	13574	13803	14201	14608	15030	15492	15984	16532	17110							
	TOFL(SLUSH) ~ FT	11447	11844	12162	12477	12843	13170	13566	14041	14516	15048	15554							
	TOFL(WET SNOW) ~ FT	10314	10607	10891	11176	11456	11886	12279	12653	13059	13333	13489							
	TOFL(DRY SNOW) ~ FT	10400	10687	10968	11248	11524	11813	12111	12477	12897	13324	13794							
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	122	122	122	122	122	122	123	123	123	123	123	123						
	V_2 ~ KIAS	133	133	133	132	132	132	131	131	131	130	130	129						
	TOFL(STANDING WATER) ~ FT	12044	12421	12812	13190	13485	13779	14167	14620	15042	15546	16068	16598						
	TOFL(SLUSH) ~ FT	10848	11203	11508	11872	12090	12462	12750	13178	13661	14087	14551							
	TOFL(WET SNOW) ~ FT	9850	10110	10380	10642	10900	11169	11444	11783	12316	12715	13019							
	TOFL(DRY SNOW) ~ FT	9940	10200	10470	10725	10979	11243	11516	11848	12229	12615	13033							
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	119	119	119	119	119	120	120	120	120	120	120	120					
	V_2 ~ KIAS	130	130	130	130	129	129	129	128	128	128	127	127	126					
	TOFL(STANDING WATER) ~ FT	11448	11816	12080	12444	12796	13077	13449	13875	14158	14622	15115	15571	16196					
	TOFL(SLUSH) ~ FT	10271	10554	10899	11159	11499	11756	12116	12380	12839	13205	13682							
	TOFL(WET SNOW) ~ FT	9411	9663	9906	10142	10376	10623	10877	11186	11542	11896	12179							
	TOFL(DRY SNOW) ~ FT	9503	9756	9999	10235	10469	10711	10961	11263	11610	11957	12333							
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	115	116	116	116	116	116	116	116	117	117	117	117	117					
	V_2 ~ KIAS	128	128	127	127	127	126	126	126	125	125	124	124	123					
	TOFL(STANDING WATER) ~ FT	10760	11123	11455	11702	12010	12358	12620	13010	13367	13799	14242	14547	15109					
	TOFL(SLUSH) ~ FT	9607	9948	10213	10527	10751	11074	11416	11708	12042	12449	12756							
	TOFL(WET SNOW) ~ FT	8965	9206	9426	9641	9854	10075	10301	10577	10896	11212	11560							
	TOFL(DRY SNOW) ~ FT	9058	9300	9521	9737	9950	10170	10396	10669	10982	11291	11626							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	113	113	114	114	114	114	114	114	114	114	114	114	115	115				
	V_2 ~ KIAS	126	126	126	125	125	124	124	124	123	123	122	121	121	120				
	TOFL(STANDING WATER) ~ FT	10305	10624	10886	11175	11484	11718	12020	12321	12724	13125	13468	13852	14419	14768				
	TOFL(SLUSH) ~ FT	9157	9474	9725	10002	10246	10548	10767	11103	11443	11786	12143							
	TOFL(WET SNOW) ~ FT	8646	8859	9065	9264	9465	9668	9877	10129	10419	10704	11013							
	TOFL(DRY SNOW) ~ FT	8741	8955	9162	9362	9563	9767	9975	10225	10513	10793	11097							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	112	113	112	111	111	111	111	111	112	112	112	112	112	112	112			
	V_2 ~ KIAS	126	126	124	123	123	122	122	121	121	121	120	119	119	118	117			
	TOFL(STANDING WATER) ~ FT	10169	10384	10494	10638	10859	11154	11373	11709	12080	12373	12684	13105	13540	14015	14650			
	TOFL(SLUSH) ~ FT	9044	9319	9419	9475	9701	9988	10223	10518	10829	11101	11403							
	TOFL(WET SNOW) ~ FT	8551	8725	8817	8887	9069	9258	9449	9678	9943	10201	10479							
	TOFL(DRY SNOW) ~ FT	8651	8826	8917	8986	9170	9359	9550	9779	10041	10296	10570							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	112	112	112	110	109	108	108	109	109	109	109	109	109	109	109			
	V_2 ~ KIAS	126	126	125	123	122	120	120	119	119	118	118	117	117	116	115			
	TOFL(STANDING WATER) ~ FT	10012	10278	10373	10420	10469	10502	10779	11017	11361	11619	11971	12273	12656	13152	13626			
	TOFL(SLUSH) ~ FT	8968	9235	9318	9359	9320	9351	9603	9853	10186	10451	10727							
	TOFL(WET SNOW) ~ FT	8495	8663	8738	8771	8808	8846	9009	9220	9459	9688	9934							
	TOFL(DRY SNOW) ~ FT	8599	8769	8844	8876	8911	8949	9112	9322	9560	9787	10031							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	112	112	111	110	109	108	107	106	106	106	106	106	106	107	107			
	V_2 ~ KIAS	126	126	125	123	122	120	119	117	117	116	116	115	114	114	113			
	TOFL(STANDING WATER) ~ FT	9918	10162	10265	10310	10328	10348	10374	10437	10674	10983	11223	11490	11902	12263	12683			
	TOFL(SLUSH) ~ FT	8925	9182	9261	9272	9300	9221	9242	9298	9511	9741	10054							
	TOFL(WET SNOW) ~ FT	8443	8605	8677	8708	8728	8737	8752	8803	9006	9211	9428							
	TOFL(DRY SNOW) ~ FT	8553	8717	8789	8818	8838	8846	8858	8908	9110	9314	9528							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	112	112	111	110	109	108	106	105	105	103	104	104	104	104	104			
	V_2 ~ KIAS	127	126	125	124	122	120	119	117	116	114	114	113	112	111	111			
	TOFL(STANDING WATER) ~ FT	9822	10062	10162	10190	10221	10240	10247	10198	10307	10324	10555	10848	11136	11446	11811			
	TOFL(SLUSH) ~ FT	8914	9103	9179	9216	9214	9207	9139	9146	9238	9206	9406							
	TOFL(WET SNOW) ~ FT	8396	8553	8622	8650	8668	8675	8671	8673	8757	8784	8976							
	TOFL(DRY SNOW) ~ FT	8512	8671	8739	8767	8784	8790	8785	8784	8866	8889	9080							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	112	112	111	110	109	108	106	105	104	102	101	101	101	101	101			
	V_2 ~ KIAS	127	127	125	124	122	121	119	117	116	114	112	111	110	109	108			
	TOFL(STANDING WATER) ~ FT	9731	9964	10046	10087	10117	10135	10080	10089	10102	10026	10006	10160	10411	10694	11057			
	TOFL(SLUSH) ~ FT	8868	9048	9121	9141	9161	9147	9086	9061	9084	9011	8932							
	TOFL(WET SNOW) ~ FT	8356	8507	8572	8598	8615	8620	8614	8613	8633	8610	8592							
	TOFL(DRY SNOW) ~ FT	8478	8631	8697	8722	8738	8742	8735	8731	8748	8722	8699							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

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Table 55

Flaps 15° **Field Pressure Altitude (9000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	132	132	132	132	132	132	132											
	V_2 ~ KIAS	140	140	139	139	139	138	138											
	TOFL(STANDING WATER) ~ FT	14839	15277	15657	16134	16617	17114	17636											
	TOFL(SLUSH) ~ FT	13380	13786	14242	14634	15073	15561	15999											
	TOFL(WET SNOW) ~ FT	12051	12449	12875	13219	13663	13799	14239											
	TOFL(DRY SNOW) ~ FT	11880	12188	12522	12868	13218	13583	13970											
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	129	129	129	129	129	129	129	129										
	V_2 ~ KIAS	137	137	137	137	136	136	136	136										
	TOFL(STANDING WATER) ~ FT	14105	14516	14954	15395	15860	16244	16735	17300										
	TOFL(SLUSH) ~ FT	12762	13142	13495	13907	14358	14745	15189	15734										
	TOFL(WET SNOW) ~ FT	11340	11810	12175	12578	12938	13101	13479	13870										
	TOFL(DRY SNOW) ~ FT	11407	11695	12006	12319	12654	12992	13350	13784										
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	126	126	126	126	126	126	126	126	126	126								
	V_2 ~ KIAS	135	135	135	134	134	134	133	133	132	132								
	TOFL(STANDING WATER) ~ FT	13566	13867	14198	14618	15039	15476	15915	16372	16944	17565								
	TOFL(SLUSH) ~ FT	12153	12454	12856	13236	13583	13989	14361	14864	15431	15932								
	TOFL(WET SNOW) ~ FT	10881	11152	11445	11887	12275	12492	12865	13254	13420	13828								
	TOFL(DRY SNOW) ~ FT	10960	11226	11516	11812	12110	12420	12748	13143	13585	14077								
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	122	122	122	123	123	123	123	123	123	123	123							
	V_2 ~ KIAS	133	132	132	132	131	131	131	130	130	129	129							
	TOFL(STANDING WATER) ~ FT	12807	13178	13568	13790	14185	14587	15011	15411	15938	16493	17068							
	TOFL(SLUSH) ~ FT	11501	11857	12086	12466	12829	13151	13543	13946	14451	14930	15507							
	TOFL(WET SNOW) ~ FT	10373	10628	10895	11171	11447	11734	12037	12361	12542	12888	13263							
	TOFL(DRY SNOW) ~ FT	10464	10712	10976	11247	11520	11803	12103	12461	12862	13294	13758							
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	119	119	119	120	119	120	120	120	120	120	120						
	V_2 ~ KIAS	130	130	130	129	129	129	128	128	127	127	127	126						
	TOFL(STANDING WATER) ~ FT	12080	12422	12801	13172	13465	13850	14146	14573	14994	15515	16028	16570						
	TOFL(SLUSH) ~ FT	10897	11193	11499	11837	12126	12419	12729	13146	13552	14051	14507							
	TOFL(WET SNOW) ~ FT	9904	10132	10376	10630	10885	11149	11429	11759	12025	12381	12757							
	TOFL(DRY SNOW) ~ FT	9998	10227	10471	10720	10971	11230	11504	11829	12192	12592	12999							
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	116	116	116	116	116	116	116	116	117	117	117	117	117					
	V_2 ~ KIAS	128	127	127	127	126	126	125	125	125	124	124	123	122					
	TOFL(STANDING WATER) ~ FT	11462	11772	12019	12361	12722	12996	13363	13753	14157	14521	14917	15406	16027					
	TOFL(SLUSH) ~ FT	10272	10524	10817	11087	11411	11682	12019	12355	12706	13093	13493							
	TOFL(WET SNOW) ~ FT	9432	9638	9859	10087	10315	10551	10804	11104	11438	11784	12142							
	TOFL(DRY SNOW) ~ FT	9528	9735	9957	10184	10412	10647	10895	11188	11514	11872	12233							
22,000 lb 9979 kg	V_1=V_R ~ KIAS	114	114	114	114	114	114	114	114	114	114	114	114	115	115				
	V_2 ~ KIAS	126	125	125	125	124	124	124	123	123	122	122	121	120	120				
	TOFL(STANDING WATER) ~ FT	10886	11179	11498	11811	12046	12392	12657	13043	13466	13840	14294	14593	15196	15758				
	TOFL(SLUSH) ~ FT	9732	10003	10297	10565	10786	11106	11407	11738	12057	12482	12782							
	TOFL(WET SNOW) ~ FT	9074	9266	9474	9684	9895	10112	10342	10612	10914	11250	11590							
	TOFL(DRY SNOW) ~ FT	9173	9365	9574	9785	9996	10213	10441	10709	11007	11334	11661							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	112	111	111	111	111	111	111	111	112	112	112	112	112	112				
	V_2 ~ KIAS	125	124	123	123	122	122	121	121	120	120	119	119	118	117				
	TOFL(STANDING WATER) ~ FT	10632	10696	10883	11177	11482	11695	12016	12312	12699	13037	13451	13846	14406	14938				
	TOFL(SLUSH) ~ FT	9502	9544	9728	10006	10246	10524	10765	11095	11418	11771	12122							
	TOFL(WET SNOW) ~ FT	8888	8936	9082	9276	9472	9671	9881	10128	10402	10703	11002							
	TOFL(DRY SNOW) ~ FT	8990	9038	9185	9378	9575	9774	9985	10230	10501	10798	11092							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	112	111	110	109	108	108	108	109	109	109	109	109	109	109	110			
	V_2 ~ KIAS	125	124	122	121	120	120	119	119	118	118	117	117	116	116	115			
	TOFL(STANDING WATER) ~ FT	10508	10555	10606	10672	10801	11103	11320	11637	11929	12308	12607	13034	13454	13933	14558			
	TOFL(SLUSH) ~ FT	9414	9427	9469	9529	9645	9875	10144	10410	10738	11041	11360							
	TOFL(WET SNOW) ~ FT	8807	8839	8875	8927	9037	9220	9412	9634	9879	10149	10414							
	TOFL(DRY SNOW) ~ FT	8914	8946	8982	9032	9142	9326	9518	9739	9983	10250	10511							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	112	111	110	108	107	106	106	106	106	106	106	106	106	107	107			
	V_2 ~ KIAS	125	124	122	121	119	118	117	117	116	116	115	114	114	113	113			
	TOFL(STANDING WATER) ~ FT	10342	10387	10429	10462	10491	10519	10704	10953	11279	11545	11808	12192	12558	12975	13515			
	TOFL(SLUSH) ~ FT	9336	9368	9389	9403	9345	9368	9476	9786	10034	10361	10630							
	TOFL(WET SNOW) ~ FT	8746	8777	8804	8825	8841	8872	8973	9175	9394	9634	9867							
	TOFL(DRY SNOW) ~ FT	8860	8890	8917	8936	8951	8981	9082	9283	9501	9739	9970							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	112	111	109	108	107	106	105	104	103	104	104	104	104	104	104			
	V_2 ~ KIAS	126	124	123	121	119	118	116	115	114	114	113	112	112	111	110			
	TOFL(STANDING WATER) ~ FT	10239	10283	10323	10355	10374	10366	10400	10448	10607	10865	11155	11419	11739	12177	12582			
	TOFL(SLUSH) ~ FT	9304	9291	9319	9346	9333	9244	9272	9313	9451	9678	9891							
	TOFL(WET SNOW) ~ FT	8692	8720	8746	8764	8771	8770	8792	8828	8959	9175	9379							
	TOFL(DRY SNOW) ~ FT	8812	8840	8865	8882	8888	8885	8905	8940	9069	9283	9485							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	112	110	109	108	107	106	104	103	102	101	101	101	101	101	101			
	V_2 ~ KIAS	126	125	123	121	120	118	117	115	113	112	111	110	109	109	108			
	TOFL(STANDING WATER) ~ FT	10136	10179	10217	10247	10251	10260	10280	10213	10235	10306	10457	10708	11042	11350	11696			
	TOFL(SLUSH) ~ FT	9253	9281	9244	9263	9252	9249	9179	9168	9140	9196	9338							
	TOFL(WET SNOW) ~ FT	8644	8671	8694	8710	8716	8713	8722	8707	8737	8785	8919							
	TOFL(DRY SNOW) ~ FT	8770	8797	8820	8835	8840	8835	8843	8825	8852	8897	9029							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

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Table 56

Flaps 15° **Field Pressure Altitude (10,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	$V_1=V_R$ ~ KIAS	132	132	132	132	132	132												
	V_2 ~ KIAS	139	139	139	139	138	138												
	TOFL(STANDING WATER) ~ FT	15735	16114	16609	17118	17638	18178												
	TOFL(SLUSH) ~ FT	14230	14607	15057	15554	16054	16501												
	TOFL(WET SNOW) ~ FT	12863	13191	13644	14027	14162	14542												
	TOFL(DRY SNOW) ~ FT	12511	12842	13201	13574	13956	14357												
27,000 lb **12,247 kg**	$V_1=V_R$ ~ KIAS	129	129	129	129	129	129	129											
	V_2 ~ KIAS	137	137	136	136	136	136	135											
	TOFL(STANDING WATER) ~ FT	14951	15389	15845	16337	16808	17309	17768											
	TOFL(SLUSH) ~ FT	13488	13895	14338	14743	15184	15677	16114											
	TOFL(WET SNOW) ~ FT	12167	12564	12948	13334	13508	13878	13929											
	TOFL(DRY SNOW) ~ FT	12000	12307	12632	12989	13343	13713	14098											
26,000 lb **11,793 kg**	$V_1=V_R$ ~ KIAS	126	126	126	126	126	126	126	126										
	V_2 ~ KIAS	135	134	134	134	133	133	133	132										
	TOFL(STANDING WATER) ~ FT	14199	14610	15045	15492	15945	16416	16886	17465										
	TOFL(SLUSH) ~ FT	12854	13231	13579	13997	14439	14825	15286	15831										
	TOFL(WET SNOW) ~ FT	11442	11872	12269	12677	12881	13250	13381	13794										
	TOFL(DRY SNOW) ~ FT	11514	11798	12105	12423	12748	13087	13441	13885										
25,000 lb **11,340 kg**	$V_1=V_R$ ~ KIAS	123	123	123	123	123	123	123	123	123	123								
	V_2 ~ KIAS	132	132	131	131	131	131	130	130	130	129								
	TOFL(STANDING WATER) ~ FT	13573	13870	14192	14608	15032	15466	15900	16427	16957	17552								
	TOFL(SLUSH) ~ FT	12173	12458	12830	13160	13555	13978	14326	14857	15361	15908								
	TOFL(WET SNOW) ~ FT	10897	11162	11446	11745	12125	12504	12724	13144	13592	14432								
	TOFL(DRY SNOW) ~ FT	10979	11240	11521	11813	12110	12419	12741	13147	13601	14064								
24,000 lb **10,886 kg**	$V_1=V_R$ ~ KIAS	119	119	120	120	120	120	120	120	120	120	120							
	V_2 ~ KIAS	130	129	129	129	128	128	128	127	127	127	126							
	TOFL(STANDING WATER) ~ FT	12809	13173	13558	13871	14172	14575	14976	15460	15944	16491	17053							
	TOFL(SLUSH) ~ FT	11504	11833	12130	12436	12742	13119	13524	13918	14453	14900	15486							
	TOFL(WET SNOW) ~ FT	10381	10626	10892	11161	11439	11726	12022	12436	12875	13608	14040							
	TOFL(DRY SNOW) ~ FT	10477	10718	10977	11244	11517	11799	12093	12461	12872	13291	13745							
23,000 lb **10,433 kg**	$V_1=V_R$ ~ KIAS	116	116	116	116	116	116	116	117	117	117	117	117						
	V_2 ~ KIAS	127	127	126	126	126	125	125	125	124	124	123	123						
	TOFL(STANDING WATER) ~ FT	12032	12367	12737	13021	13391	13771	14148	14435	14929	15404	15992	16464						
	TOFL(SLUSH) ~ FT	10837	11088	11420	11699	12036	12332	12633	13001	13470	13884	14415							
	TOFL(WET SNOW) ~ FT	9869	10088	10324	10568	10820	11084	11352	11656	11980	12500	12826							
	TOFL(DRY SNOW) ~ FT	9967	10187	10423	10666	10913	11170	11436	11768	12138	12510	12950							
22,000 lb **9979 kg**	$V_1=V_R$ ~ KIAS	114	114	114	114	114	114	114	114	114	115	115	115	115					
	V_2 ~ KIAS	125	125	124	124	124	123	123	122	122	122	121	120	120					
	TOFL(STANDING WATER) ~ FT	11510	11816	12067	12421	12767	13043	13407	13841	14231	14578	15046	15529	16170					
	TOFL(SLUSH) ~ FT	10327	10571	10868	11128	11452	11725	12059	12407	12778	13139	13578							
	TOFL(WET SNOW) ~ FT	9484	9690	9908	10133	10362	10599	10849	11161	11508	11953	12308							
	TOFL(DRY SNOW) ~ FT	9585	9792	10010	10235	10464	10701	10945	11250	11589	11927	12294							
21,000 lb **9525 kg**	$V_1=V_R$ ~ KIAS	111	111	111	111	111	111	111	112	112	112	112	112	112	112				
	V_2 ~ KIAS	123	123	122	122	121	121	121	120	120	119	119	118	118	117				
	TOFL(STANDING WATER) ~ FT	10900	11190	11504	11729	12048	12397	12658	13057	13493	13843	14302	14600	15188	15770				
	TOFL(SLUSH) ~ FT	9743	10016	10263	10570	10790	11091	11405	11724	12081	12483	12788							
	TOFL(WET SNOW) ~ FT	9098	9286	9489	9696	9905	10124	10350	10631	10944	11257	11601							
	TOFL(DRY SNOW) ~ FT	9201	9390	9594	9801	10011	10230	10455	10734	11043	11347	11677							
20,000 lb **9072 kg**	$V_1=V_R$ ~ KIAS	110	109	108	108	108	109	109	109	109	109	109	109	109	110				
	V_2 ~ KIAS	123	121	120	120	119	119	119	118	118	117	117	116	116	115				
	TOFL(STANDING WATER) ~ FT	10674	10747	10826	11134	11425	11650	11966	12269	12665	12977	13392	13780	14343	14822				
	TOFL(SLUSH) ~ FT	9546	9610	9670	9962	10176	10458	10720	10986	11368	11677	12004							
	TOFL(WET SNOW) ~ FT	8939	8995	9058	9246	9440	9639	9843	10097	10379	10655	10954							
	TOFL(DRY SNOW) ~ FT	9046	9102	9165	9354	9549	9748	9952	10204	10484	10756	11049							
19,000 lb **8618 kg**	$V_1=V_R$ ~ KIAS	110	109	108	107	106	106	106	106	106	106	106	106	107	107				
	V_2 ~ KIAS	123	121	120	118	117	117	116	116	116	115	115	114	113	113				
	TOFL(STANDING WATER) ~ FT	10566	10606	10641	10702	10755	10993	11265	11509	11885	12160	12534	12874	13374	13839				
	TOFL(SLUSH) ~ FT	9473	9507	9507	9561	9554	9812	10088	10337	10633	10960	11258							
	TOFL(WET SNOW) ~ FT	8875	8900	8921	8968	9007	9189	9373	9600	9853	10097	10360							
	TOFL(DRY SNOW) ~ FT	8989	9014	9034	9079	9117	9300	9484	9711	9963	10204	10463							
18,000 lb **8165 kg**	$V_1=V_R$ ~ KIAS	110	109	108	106	105	104	103	103	104	104	104	104	104	104				
	V_2 ~ KIAS	123	122	120	119	117	116	114	114	114	113	112	112	111	110				
	TOFL(STANDING WATER) ~ FT	10460	10499	10532	10545	10513	10571	10601	10917	11243	11479	11752	12125	12488	12890				
	TOFL(SLUSH) ~ FT	9395	9421	9449	9440	9372	9408	9448	9681	10010	10240	10560							
	TOFL(WET SNOW) ~ FT	8817	8841	8860	8872	8878	8922	8955	9156	9386	9599	9829							
	TOFL(DRY SNOW) ~ FT	8938	8961	8979	8990	8995	9037	9069	9271	9499	9711	9938							
17,000 lb **7711 kg**	$V_1=V_R$ ~ KIAS	110	109	107	106	105	104	102	102	101	101	101	101	101	101				
	V_2 ~ KIAS	124	122	120	119	117	116	114	113	112	111	110	109	109	108				
	TOFL(STANDING WATER) ~ FT	10296	10334	10365	10389	10406	10406	10414	10506	10621	10782	11086	11343	11655	12001				
	TOFL(SLUSH) ~ FT	9393	9346	9366	9385	9369	9303	9293	9378	9471	9622	9837							
	TOFL(WET SNOW) ~ FT	8766	8789	8806	8816	8820	8827	8824	8901	8989	9132	9335							
	TOFL(DRY SNOW) ~ FT	8894	8916	8933	8941	8945	8950	8945	9021	9107	9248	9449							

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STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

Table 57

Flags 15° **Field Pressure Altitude (11,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1=V_R ~ KIAS	132	132	132	132														
	V_2 ~ KIAS	139	139	138	138														
	TOFL(STANDING WATER) ~ FT	16601	17100	17629	18181														
	TOFL(SLUSH) ~ FT	15045	15533	16049	16513														
	TOFL(WET SNOW) ~ FT	13632	14000	14537	14878														
	TOFL(DRY SNOW) ~ FT	13189	13549	13938	14347														
27,000 lb **12,247 kg**	V_1=V_R ~ KIAS	129	129	129	129	129													
	V_2 ~ KIAS	136	136	136	136	135													
	TOFL(STANDING WATER) ~ FT	15842	16325	16823	17341	17845													
	TOFL(SLUSH) ~ FT	14331	14724	15172	15679	16189													
	TOFL(WET SNOW) ~ FT	12939	13314	13789	14080	14404													
	TOFL(DRY SNOW) ~ FT	12625	12970	13331	13710	14093													
26,000 lb **11,793 kg**	V_1=V_R ~ KIAS	126	126	126	126	126	126	126											
	V_2 ~ KIAS	134	134	134	133	133	133	132											
	TOFL(STANDING WATER) ~ FT	15046	15486	15950	16433	16922	17424	17939											
	TOFL(SLUSH) ~ FT	13576	13985	14434	14830	15267	15760	16271											
	TOFL(WET SNOW) ~ FT	12265	12662	13066	13233	13360	13738	14121											
	TOFL(DRY SNOW) ~ FT	12103	12411	12742	13090	13443	13810	14204											
25,000 lb **11,340 kg**	V_1=V_R ~ KIAS	123	123	123	123	123	123	123	123										
	V_2 ~ KIAS	132	131	131	131	130	130	130	129										
	TOFL(STANDING WATER) ~ FT	14197	14607	15039	15488	15938	16406	16885	17458										
	TOFL(SLUSH) ~ FT	12831	13153	13554	13988	14354	14793	15281	15721										
	TOFL(WET SNOW) ~ FT	11446	11739	12257	12574	12830	13257	13689	14180										
	TOFL(DRY SNOW) ~ FT	11523	11806	12109	12428	12750	13085	13445	13882										
24,000 lb **10,886 kg**	V_1=V_R ~ KIAS	120	120	120	120	120	120	120	120	120	120								
	V_2 ~ KIAS	129	129	128	128	128	127	127	127	126	126								
	TOFL(STANDING WATER) ~ FT	13565	13927	14183	14600	15021	15453	15895	16415	16919	17528								
	TOFL(SLUSH) ~ FT	12134	12434	12815	13151	13542	13886	14317	14834	15301	15910								
	TOFL(WET SNOW) ~ FT	10893	11157	11441	11737	12025	12403	12787	13221	13661	14406								
	TOFL(DRY SNOW) ~ FT	10982	11242	11521	11813	12107	12412	12741	13136	13568	14042								
23,000 lb **10,433 kg**	V_1=V_R ~ KIAS	116	116	116	116	116	116	117	117	117	117	117							
	V_2 ~ KIAS	126	126	126	125	125	125	124	124	124	123	123							
	TOFL(STANDING WATER) ~ FT	12748	13108	13405	13798	14093	14477	14889	15315	15890	16432	16882							
	TOFL(SLUSH) ~ FT	11428	11701	12048	12394	12670	13038	13375	13832	14344	14832	15275							
	TOFL(WET SNOW) ~ FT	10331	10569	10827	11100	11369	11725	12086	12490	12902	13522	13911							
	TOFL(DRY SNOW) ~ FT	10431	10669	10923	11188	11455	11732	12030	12385	12839	13266	13650							
22,000 lb **9979 kg**	V_1=V_R ~ KIAS	114	114	114	114	114	114	114	114	114	115	115	115						
	V_2 ~ KIAS	125	124	124	123	123	123	122	122	121	121	120	120						
	TOFL(STANDING WATER) ~ FT	12080	12433	12785	13135	13442	13824	14225	14555	14966	15481	15999	16540						
	TOFL(SLUSH) ~ FT	10881	11134	11464	11746	12086	12377	12687	13048	13500	13931	14450							
	TOFL(WET SNOW) ~ FT	9918	10138	10373	10619	10870	11134	11410	11721	12041	12472	12817							
	TOFL(DRY SNOW) ~ FT	10021	10242	10477	10722	10969	11225	11499	11824	12177	12564	12976							
21,000 lb **9525 kg**	V_1=V_R ~ KIAS	111	111	111	111	111	111	112	112	112	112	112	112	112					
	V_2 ~ KIAS	122	122	122	121	121	120	120	120	119	119	118	118	117					
	TOFL(STANDING WATER) ~ FT	11517	11822	12072	12427	12774	13049	13424	13846	14216	14581	15054	15543	16168					
	TOFL(SLUSH) ~ FT	10273	10579	10816	11135	11453	11730	12071	12411	12755	13138	13550							
	TOFL(WET SNOW) ~ FT	9499	9705	9920	10146	10375	10611	10864	11171	11498	11856	12271							
	TOFL(DRY SNOW) ~ FT	9605	9812	10028	10254	10482	10718	10969	11266	11585	11936	12307							
20,000 lb **9072 kg**	V_1=V_R ~ KIAS	109	108	108	109	109	109	109	109	109	109	109	109	109	110				
	V_2 ~ KIAS	120	120	119	119	119	118	118	118	117	117	116	116	115	115				
	TOFL(STANDING WATER) ~ FT	10868	11151	11462	11686	12003	12348	12613	13000	13331	13775	14218	14674	15178	15659				
	TOFL(SLUSH) ~ FT	9716	9981	10212	10512	10750	11047	11309	11662	11989	12345	12781							
	TOFL(WET SNOW) ~ FT	9093	9260	9460	9665	9873	10087	10316	10586	10877	11197	11538							
	TOFL(DRY SNOW) ~ FT	9201	9369	9570	9776	9984	10198	10427	10694	10982	11297	11627							
19,000 lb **8618 kg**	V_1=V_R ~ KIAS	108	107	106	106	106	106	106	106	106	106	106	107	107	107				
	V_2 ~ KIAS	120	119	118	117	116	116	116	115	115	115	114	114	113	112				
	TOFL(STANDING WATER) ~ FT	10697	10763	10831	11089	11309	11596	11833	12202	12557	12898	13294	13696	14212	14728				
	TOFL(SLUSH) ~ FT	9571	9618	9678	9838	10131	10353	10654	10928	11201	11531	11862							
	TOFL(WET SNOW) ~ FT	8973	9022	9075	9217	9407	9600	9807	10048	10308	10592	10888							
	TOFL(DRY SNOW) ~ FT	9087	9136	9188	9330	9521	9715	9921	10162	10419	10699	10990							
18,000 lb **8165 kg**	V_1=V_R ~ KIAS	108	107	105	104	104	103	103	103	104	104	104	104	104	104				
	V_2 ~ KIAS	120	119	117	116	115	114	114	113	113	112	112	111	111	110				
	TOFL(STANDING WATER) ~ FT	10589	10627	10661	10721	10777	10919	11229	11460	11798	12096	12466	12800	13250	13709				
	TOFL(SLUSH) ~ FT	9501	9532	9531	9584	9593	9746	9975	10293	10568	10831	11175							
	TOFL(WET SNOW) ~ FT	8913	8936	8956	9001	9043	9165	9354	9570	9800	10050	10309							
	TOFL(DRY SNOW) ~ FT	9033	9056	9075	9120	9160	9282	9472	9687	9916	10164	10419							
17,000 lb **7711 kg**	V_1=V_R ~ KIAS	108	106	105	104	103	102	101	101	101	101	101	101	101	101				
	V_2 ~ KIAS	121	119	118	116	115	113	112	111	111	110	110	109	108	107				
	TOFL(STANDING WATER) ~ FT	10484	10521	10553	10583	10539	10592	10721	10859	11094	11325	11670	11959	12359	12751				
	TOFL(SLUSH) ~ FT	9425	9450	9476	9471	9403	9435	9498	9610	9883	10170	10412							
	TOFL(WET SNOW) ~ FT	8860	8882	8900	8915	8922	8961	9017	9121	9327	9548	9772							
	TOFL(DRY SNOW) ~ FT	8988	9010	9027	9041	9046	9084	9139	9241	9448	9666	9888							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACTO004C

Table 58

Flaps 15° **Field Pressure Altitude (12,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS	132	132																
	V_2 ~ KIAS	138	138																
	TOFL(STANDING WATER) ~ FT	17884	18424																
	TOFL(SLUSH) ~ FT	16213	16730																
	TOFL(WET SNOW) ~ FT	14634	15101																
	TOFL(DRY SNOW) ~ FT	14079	14472																
27,000 lb 12,247 kg	V_1=V_R ~ KIAS	129	129	129	129														
	V_2 ~ KIAS	136	136	136	135														
	TOFL(STANDING WATER) ~ FT	17003	17510	18045	18613														
	TOFL(SLUSH) ~ FT	15350	15825	16348	16903														
	TOFL(WET SNOW) ~ FT	14112	14279	14622	15484														
	TOFL(DRY SNOW) ~ FT	13470	13835	14225	14647														
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	126	126	126	126	126													
	V_2 ~ KIAS	134	133	133	133	133													
	TOFL(STANDING WATER) ~ FT	16125	16599	17100	17628	18160													
	TOFL(SLUSH) ~ FT	14589	15040	15419	15935	16455													
	TOFL(WET SNOW) ~ FT	13195	13403	13750	14492	15889													
	TOFL(DRY SNOW) ~ FT	12880	13216	13575	13962	14351													
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	123	123	123	123	123	123												
	V_2 ~ KIAS	131	131	130	130	130	129												
	TOFL(STANDING WATER) ~ FT	15208	15650	16114	16604	17098	17610												
	TOFL(SLUSH) ~ FT	13723	14131	14575	14962	15445	15915												
	TOFL(WET SNOW) ~ FT	12397	12650	12947	13300	13600	13883												
	TOFL(DRY SNOW) ~ FT	12244	12552	12881	13234	13589	13960												
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	120	120	120	120	120	120	120	120										
	V_2 ~ KIAS	129	128	128	128	127	127	127	126										
	TOFL(STANDING WATER) ~ FT	14346	14758	15189	15644	16103	16574	17047	17638										
	TOFL(SLUSH) ~ FT	12966	13288	13687	14126	14477	14939	15416	15736										
	TOFL(WET SNOW) ~ FT	11571	11857	12073	12376	12675	12986	13327	13695										
	TOFL(DRY SNOW) ~ FT	11653	11936	12237	12559	12884	13222	13575	14026										
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	116	116	116	116	117	117	117	117	117	117								
	V_2 ~ KIAS	126	126	125	125	125	124	124	124	123	123								
	TOFL(STANDING WATER) ~ FT	13562	13950	14259	14679	15100	15519	15965	16442	17016	17595								
	TOFL(SLUSH) ~ FT	12206	12556	12811	13200	13532	13937	14373	14809	15307	15814								
	TOFL(WET SNOW) ~ FT	10954	11219	11498	11856	12210	12574	12960	13375	13741	14409								
	TOFL(DRY SNOW) ~ FT	11052	11310	11584	11876	12171	12477	12796	13201	13620	14054								
22,000 lb 9979 kg	V_1=V_R ~ KIAS	114	114	114	114	114	114	114	114	115	115	115							
	V_2 ~ KIAS	124	124	123	123	122	122	122	121	121	120	120							
	TOFL(STANDING WATER) ~ FT	12939	13302	13662	14000	14405	14714	15115	15617	16083	16637	17207							
	TOFL(SLUSH) ~ FT	11601	11876	12223	12599	12858	13232	13566	14040	14517	15018	15565							
	TOFL(WET SNOW) ~ FT	10498	10737	10994	11273	11547	11835	12223	12644	13037	13632	14142							
	TOFL(DRY SNOW) ~ FT	10604	10843	11097	11367	11639	11921	12215	12586	12987	13408	13865							
21,000 lb 9525 kg	V_1=V_R ~ KIAS	111	111	111	111	112	112	112	112	112	112	112	112						
	V_2 ~ KIAS	122	121	121	121	120	120	120	119	119	118	118	117						
	TOFL(STANDING WATER) ~ FT	12220	12576	12928	13302	13597	13985	14382	14729	15153	15663	16183	16731						
	TOFL(SLUSH) ~ FT	11002	11263	11594	11880	12221	12520	12826	13200	13666	14090	14610							
	TOFL(WET SNOW) ~ FT	10044	10264	10498	10748	11003	11267	11541	11888	12227	12669	13076							
	TOFL(DRY SNOW) ~ FT	10153	10374	10608	10858	11109	11368	11637	11974	12339	12719	13131							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	109	109	109	109	109	109	109	109	109	109	109	109	110					
	V_2 ~ KIAS	120	119	119	119	118	118	118	117	117	116	116	115	115					
	TOFL(STANDING WATER) ~ FT	11607	11827	12152	12514	12838	13139	13509	13925	14322	14678	15148	15637	16243					
	TOFL(SLUSH) ~ FT	10341	10637	10881	11192	11466	11775	12071	12475	12847	13220	13609							
	TOFL(WET SNOW) ~ FT	9581	9782	9994	10222	10451	10687	10933	11245	11584	11931	12306							
	TOFL(DRY SNOW) ~ FT	9693	9895	10109	10336	10565	10801	11046	11351	11679	12019	12384							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	106	106	106	106	106	106	106	106	106	107	107	107	107	107				
	V_2 ~ KIAS	118	117	117	116	116	116	115	115	115	114	114	113	113	112				
	TOFL(STANDING WATER) ~ FT	11036	11216	11442	11756	12078	12342	12682	13076	13415	13843	14216	14736	15212	15684				
	TOFL(SLUSH) ~ FT	9858	9961	10260	10509	10802	11043	11352	11717	12060	12406	12820							
	TOFL(WET SNOW) ~ FT	9238	9333	9529	9734	9941	10155	10376	10652	10950	11256	11586							
	TOFL(DRY SNOW) ~ FT	9353	9449	9646	9851	10059	10273	10494	10768	11063	11364	11686							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	106	105	104	103	103	103	103	104	104	104	104	104	104	104				
	V_2 ~ KIAS	118	117	115	114	114	113	113	113	112	112	111	111	110	110				
	TOFL(STANDING WATER) ~ FT	10845	10908	10978	11079	11372	11679	11909	12285	12585	12973	13294	13753	14187	14733				
	TOFL(SLUSH) ~ FT	9712	9756	9814	9905	10139	10414	10667	10988	11282	11632	11958							
	TOFL(WET SNOW) ~ FT	9117	9164	9215	9298	9485	9681	9880	10126	10391	10659	10947							
	TOFL(DRY SNOW) ~ FT	9240	9286	9336	9419	9607	9803	10003	10248	10511	10775	11058							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	106	105	103	102	102	101	101	101	101	101	101	101	101	101				
	V_2 ~ KIAS	118	117	115	114	113	111	111	110	110	110	109	108	108	107				
	TOFL(STANDING WATER) ~ FT	10737	10776	10805	10860	10933	11002	11273	11523	11870	12151	12484	12837	13211	13689				
	TOFL(SLUSH) ~ FT	9643	9675	9669	9717	9765	9743	10018	10286	10602	10883	11146							
	TOFL(WET SNOW) ~ FT	9062	9085	9100	9140	9197	9251	9415	9638	9873	10107	10356							
	TOFL(DRY SNOW) ~ FT	9192	9214	9228	9267	9324	9377	9542	9764	9998	10230	10475							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

RGACTO004C

Table 59

Flaps 15° **Field Pressure Altitude (13,000 feet)**

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb 12,701 kg	V_1=V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL(STANDING WATER) ~ FT																		
	TOFL(SLUSH) ~ FT																		
	TOFL(WET SNOW) ~ FT																		
	TOFL(DRY SNOW) ~ FT																		
27,000 lb 12,247 kg	V_1=V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL(STANDING WATER) ~ FT																		
	TOFL(SLUSH) ~ FT																		
	TOFL(WET SNOW) ~ FT																		
	TOFL(DRY SNOW) ~ FT																		
26,000 lb 11,793 kg	V_1=V_R ~ KIAS	126	126	126															
	V_2 ~ KIAS	133	133	133															
	TOFL(STANDING WATER) ~ FT	17451	17971	18524															
	TOFL(SLUSH) ~ FT	15732	16237	16775															
	TOFL(WET SNOW) ~ FT	14293	14675	15180															
	TOFL(DRY SNOW) ~ FT	13851	14224	14627															
25,000 lb 11,340 kg	V_1=V_R ~ KIAS	122	123	123	123	123													
	V_2 ~ KIAS	130	130	130	129	129													
	TOFL(STANDING WATER) ~ FT	16449	16933	17446	17991	18528													
	TOFL(SLUSH) ~ FT	14879	15270	15751	16255	16776													
	TOFL(WET SNOW) ~ FT	12764	13096	13453	13825	14264													
	TOFL(DRY SNOW) ~ FT	13147	13488	13857	14254	14651													
24,000 lb 10,886 kg	V_1=V_R ~ KIAS	119	120	120	120	120	120												
	V_2 ~ KIAS	128	128	127	127	127	126												
	TOFL(STANDING WATER) ~ FT	15509	15960	16436	16941	17440	17958												
	TOFL(SLUSH) ~ FT	13973	14404	14788	15260	15746	16022												
	TOFL(WET SNOW) ~ FT	12253	12565	12899	13249	13648	14020												
	TOFL(DRY SNOW) ~ FT	12493	12806	13143	13506	13862	14121												
23,000 lb 10,433 kg	V_1=V_R ~ KIAS	116	116	117	117	117	117	117	117										
	V_2 ~ KIAS	125	125	125	124	124	124	123	123										
	TOFL(STANDING WATER) ~ FT	14563	14980	15421	15886	16325	16801	17304	17864										
	TOFL(SLUSH) ~ FT	13082	13465	13887	14242	14687	15089	15596	16012										
	TOFL(WET SNOW) ~ FT	11742	12089	12445	12811	13191	13564	13884	14556										
	TOFL(DRY SNOW) ~ FT	11830	12115	12422	12751	13073	13410	13758	14144										
22,000 lb 9979 kg	V_1=V_R ~ KIAS	114	114	114	114	114	114	114	114	115	115								
	V_2 ~ KIAS	123	123	123	122	122	121	121	121	120	120								
	TOFL(STANDING WATER) ~ FT	13978	14355	14611	15046	15477	15923	16371	16910	17485	18050								
	TOFL(SLUSH) ~ FT	12503	12861	13126	13529	13936	14277	14734	15162	15638	16193								
	TOFL(WET SNOW) ~ FT	11231	11502	11791	12098	12472	12846	13188	13773	14252	14771								
	TOFL(DRY SNOW) ~ FT	11336	11600	11884	12188	12486	12796	13128	13529	13957	14398								
21,000 lb 9525 kg	V_1=V_R ~ KIAS	111	111	112	112	112	112	112	112	112	112	112							
	V_2 ~ KIAS	121	121	120	120	120	119	119	119	118	118	117							
	TOFL(STANDING WATER) ~ FT	13213	13582	13958	14304	14713	15027	15442	15940	16469	16986	17571							
	TOFL(SLUSH) ~ FT	11845	12126	12484	12865	13113	13510	13855	14324	14774	15324	15866							
	TOFL(WET SNOW) ~ FT	10727	10971	11237	11522	11800	12090	12452	12947	13399	13893	14362							
	TOFL(DRY SNOW) ~ FT	10841	11085	11347	11627	11900	12185	12488	12852	13255	13692	14159							
20,000 lb 9072 kg	V_1=V_R ~ KIAS	109	109	109	109	109	109	109	109	109	109	109	109						
	V_2 ~ KIAS	119	119	118	118	118	117	117	117	116	116	115	115						
	TOFL(STANDING WATER) ~ FT	12425	12786	13146	13506	13822	14213	14602	14960	15384	15907	16437	16977						
	TOFL(SLUSH) ~ FT	11121	11433	11727	12080	12420	12720	13093	13382	13862	14282	14825							
	TOFL(WET SNOW) ~ FT	10217	10439	10678	10933	11184	11447	11731	12064	12438	12899	13300							
	TOFL(DRY SNOW) ~ FT	10334	10558	10797	11052	11301	11560	11836	12164	12526	12916	13332							
19,000 lb 8618 kg	V_1=V_R ~ KIAS	106	106	106	106	106	106	106	106	106	107	107	107	107					
	V_2 ~ KIAS	117	116	116	116	115	115	115	114	114	114	113	113	112					
	TOFL(STANDING WATER) ~ FT	11699	12018	12365	12717	12982	13341	13713	14114	14516	14984	15292	15806	16430					
	TOFL(SLUSH) ~ FT	10494	10799	11058	11362	11635	11972	12311	12646	12999	13352	13792							
	TOFL(WET SNOW) ~ FT	9745	9947	10163	10394	10620	10855	11104	11402	11734	12094	12471							
	TOFL(DRY SNOW) ~ FT	9865	10069	10285	10517	10743	10978	11226	11521	11844	12191	12559							
18,000 lb 8165 kg	V_1=V_R ~ KIAS	104	103	103	103	103	103	103	104	104	104	104	104	104					
	V_2 ~ KIAS	116	114	114	114	113	113	112	112	112	111	111	110	110					
	TOFL(STANDING WATER) ~ FT	11346	11421	11636	11961	12298	12543	12884	13255	13604	14024	14415	14901	15388					
	TOFL(SLUSH) ~ FT	10074	10137	10436	10663	10982	11225	11534	11867	12179	12498	12765							
	TOFL(WET SNOW) ~ FT	9460	9518	9703	9915	10119	10330	10553	10818	11109	11420	11749							
	TOFL(DRY SNOW) ~ FT	9586	9643	9829	10042	10247	10458	10681	10944	11232	11538	11861							
17,000 lb 7711 kg	V_1=V_R ~ KIAS	104	103	102	101	101	101	101	101	101	101	101	101	101					
	V_2 ~ KIAS	115	114	113	112	111	111	110	110	109	109	108	108	107					
	TOFL(STANDING WATER) ~ FT	11095	11154	11235	11322	11552	11775	12105	12455	12747	13139	13463	13891	14324					
	TOFL(SLUSH) ~ FT	9933	9981	10053	10131	10264	10574	10786	11138	11411	11716	11873							
	TOFL(WET SNOW) ~ FT	9347	9390	9454	9523	9650	9842	10042	10276	10533	10805	11092							
	TOFL(DRY SNOW) ~ FT	9480	9523	9586	9655	9781	9975	10175	10409	10663	10933	11214							

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

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Table 60

Flaps 15° **Field Pressure Altitude (14,000 feet)**

STANDING WATER, SLUSH, WET SNOW, AND DRY SNOW RUNWAY CONDITIONS

T.O. WEIGHT		OUTSIDE AIR TEMPERATURE ~ °C																	
		-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
28,000 lb **12,701 kg**	V_1=V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL(STANDING WATER) ~ FT																		
	TOFL(SLUSH) ~ FT																		
	TOFL(WET SNOW) ~ FT																		
	TOFL(DRY SNOW) ~ FT																		
27,000 lb **12,247 kg**	V_1=V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL(STANDING WATER) ~ FT																		
	TOFL(SLUSH) ~ FT																		
	TOFL(WET SNOW) ~ FT																		
	TOFL(DRY SNOW) ~ FT																		
26,000 lb **11,793 kg**	V_1=V_R ~ KIAS																		
	V_2 ~ KIAS																		
	TOFL(STANDING WATER) ~ FT																		
	TOFL(SLUSH) ~ FT																		
	TOFL(WET SNOW) ~ FT																		
	TOFL(DRY SNOW) ~ FT																		
25,000 lb **11,340 kg**	V_1=V_R ~ KIAS	123	123	123															
	V_2 ~ KIAS	130	130	130															
	TOFL(STANDING WATER) ~ FT	17880	18417	18985															
	TOFL(SLUSH) ~ FT	16080	16567	17119															
	TOFL(WET SNOW) ~ FT	14503	14981	15472															
	TOFL(DRY SNOW) ~ FT	14147	14525	14939															
24,000 lb **10,886 kg**	V_1=V_R ~ KIAS	120	120	120	120	120													
	V_2 ~ KIAS	127	127	127	126	126													
	TOFL(STANDING WATER) ~ FT	16788	17280	17807	18357	18902													
	TOFL(SLUSH) ~ FT	15167	15558	16070	16394	16895													
	TOFL(WET SNOW) ~ FT	13175	13501	13927	14313	14534													
	TOFL(DRY SNOW) ~ FT	13423	13769	14147	14428	14805													
23,000 lb **10,433 kg**	V_1=V_R ~ KIAS	116	117	117	117	117	117	117											
	V_2 ~ KIAS	125	124	124	124	124	123	123											
	TOFL(STANDING WATER) ~ FT	15755	16211	16696	17202	17681	18193	18770											
	TOFL(SLUSH) ~ FT	14186	14545	14995	15428	15884	16344	16911											
	TOFL(WET SNOW) ~ FT	12380	12799	13253	13697	14079	14786	15313											
	TOFL(DRY SNOW) ~ FT	12691	13006	13348	13709	14065	14433	14818											
22,000 lb **9979 kg**	V_1=V_R ~ KIAS	114	114	114	114	114	114	114	115										
	V_2 ~ KIAS	123	122	122	122	121	121	121	120										
	TOFL(STANDING WATER) ~ FT	15001	15416	15813	16286	16756	17245	17747	18423										
	TOFL(SLUSH) ~ FT	13412	13804	14238	14616	15051	15474	15981	16592										
	TOFL(WET SNOW) ~ FT	12049	12342	12657	12971	13243	13733	14108	15010										
	TOFL(DRY SNOW) ~ FT	12145	12436	12752	13085	13413	13758	14135	14651										
21,000 lb **9525 kg**	V_1=V_R ~ KIAS	112	112	112	112	112	112	112	112	112	112								
	V_2 ~ KIAS	120	120	120	119	119	119	118	118	118	117								
	TOFL(STANDING WATER) ~ FT	14285	14674	15105	15375	15812	16267	16732	17295	17895	18521								
	TOFL(SLUSH) ~ FT	12759	13143	13415	13822	14229	14581	15053	15500	15961	16521								
	TOFL(WET SNOW) ~ FT	11486	11763	12054	12367	12722	13191	13608	13868	14323	15051								
	TOFL(DRY SNOW) ~ FT	11600	11869	12159	12465	12765	13081	13426	13844	14297	14736								
20,000 lb **9072 kg**	V_1=V_R ~ KIAS	109	109	109	109	109	109	109	109	109	109	110							
	V_2 ~ KIAS	118	118	118	117	117	117	117	116	116	115	115							
	TOFL(STANDING WATER) ~ FT	13441	13818	14199	14545	14957	15278	15705	16221	16760	17268	17852							
	TOFL(SLUSH) ~ FT	12050	12335	12694	13014	13329	13699	14066	14565	15004	15568	16001							
	TOFL(WET SNOW) ~ FT	10919	11165	11430	11718	11996	12289	12605	13009	13464	14103	14575							
	TOFL(DRY SNOW) ~ FT	11041	11288	11553	11831	12105	12392	12705	13081	13488	13916	14378							
19,000 lb **8618 kg**	V_1=V_R ~ KIAS	106	106	106	106	106	106	106	106	107	107	107	107	107					
	V_2 ~ KIAS	116	116	115	115	115	114	114	114	114	113	113	112	112					
	TOFL(STANDING WATER) ~ FT	12650	12995	13345	13658	14037	14432	14831	15308	15631	16125	16671	17193	17833					
	TOFL(SLUSH) ~ FT	11310	11620	11895	12235	12536	12895	13216	13595	14032	14487	14924							
	TOFL(WET SNOW) ~ FT	10397	10620	10860	11113	11361	11622	11914	12259	12634	13103	13496							
	TOFL(DRY SNOW) ~ FT	10523	10747	10988	11241	11489	11749	12031	12369	12732	13111	13519							
18,000 lb **8165 kg**	V_1=V_R ~ KIAS	103	103	103	103	103	103	104	104	104	104	104	104	104					
	V_2 ~ KIAS	114	114	113	113	113	112	112	112	111	111	110	110	109					
	TOFL(STANDING WATER) ~ FT	11907	12231	12582	12916	13196	13557	13920	14289	14753	15211	15646	16020	16598					
	TOFL(SLUSH) ~ FT	10679	10917	11238	11495	11810	12148	12468	12829	13209	13591	13977							
	TOFL(WET SNOW) ~ FT	9931	10137	10354	10581	10805	11039	11293	11599	11929	12271	12644							
	TOFL(DRY SNOW) ~ FT	10061	10268	10486	10714	10938	11173	11426	11729	12052	12386	12743							
17,000 lb **7711 kg**	V_1=V_R ~ KIAS	102	101	101	101	101	101	101	101	101	101	101	101	101					
	V_2 ~ KIAS	113	112	111	111	110	110	110	109	109	108	108	107	106					
	TOFL(STANDING WATER) ~ FT	11628	11712	11829	12148	12402	12733	13081	13392	13810	14218	14597	15065	15534					
	TOFL(SLUSH) ~ FT	10342	10415	10517	10835	11066	11380	11636	12002	12376	12730	13073							
	TOFL(WET SNOW) ~ FT	9721	9786	9880	10085	10289	10499	10726	10997	11286	11584	11901							
	TOFL(DRY SNOW) ~ FT	9858	9923	10016	10222	10428	10638	10865	11136	11421	11715	12026							

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Non-FAA Approved Performance Data

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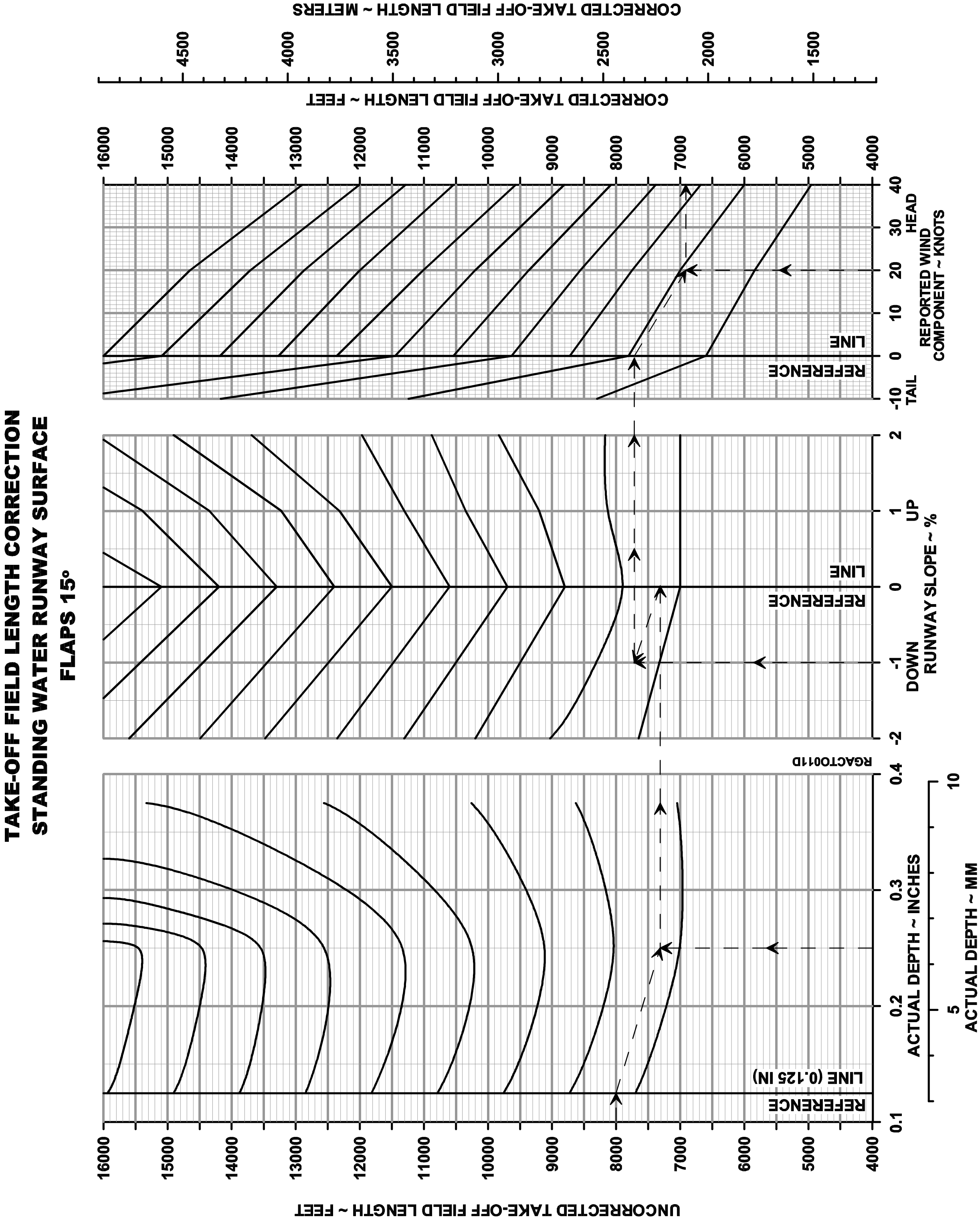
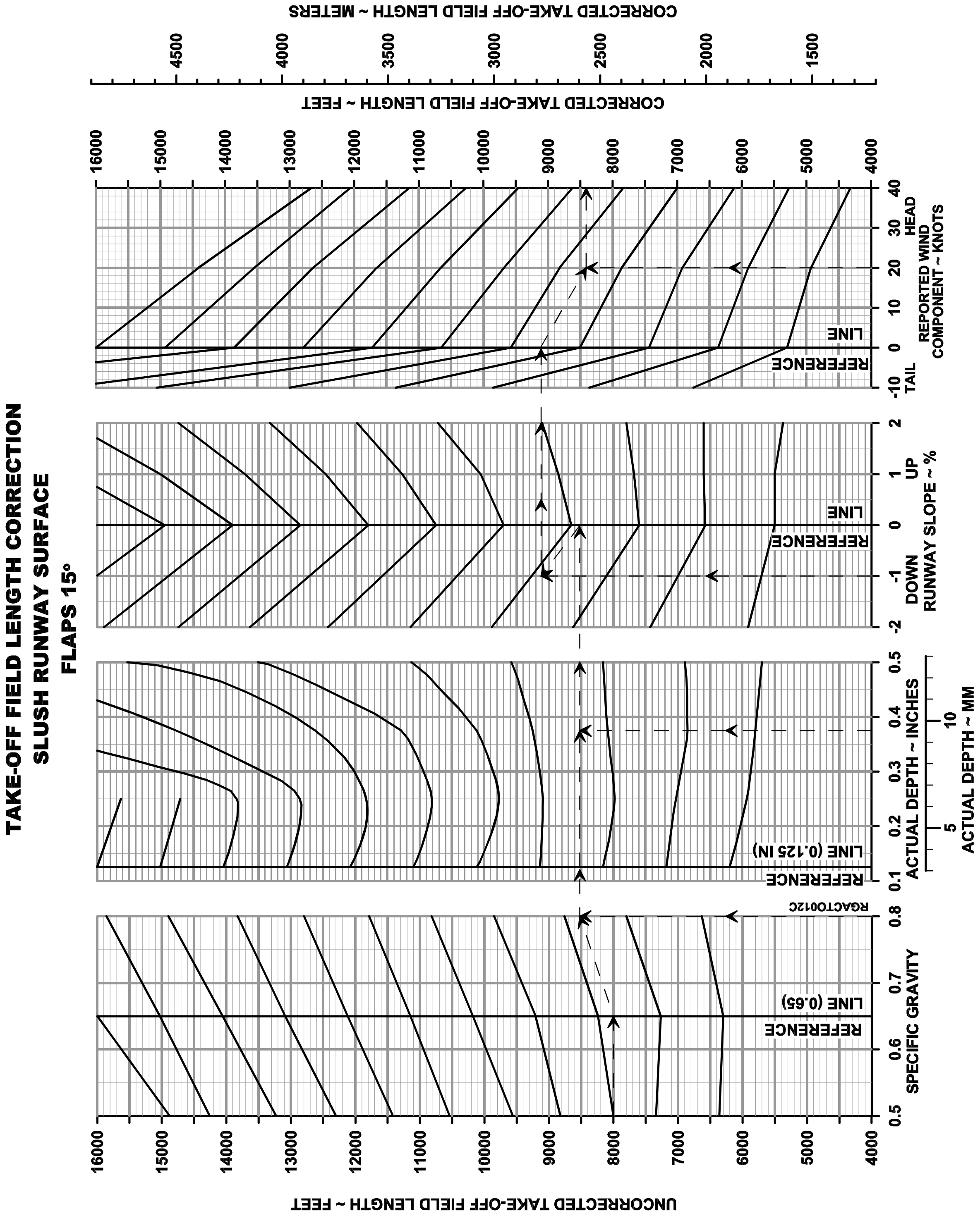


Take-Off Field Length - Standing Water Runway (Flaps 15°)

Corrected for Runway Gradient

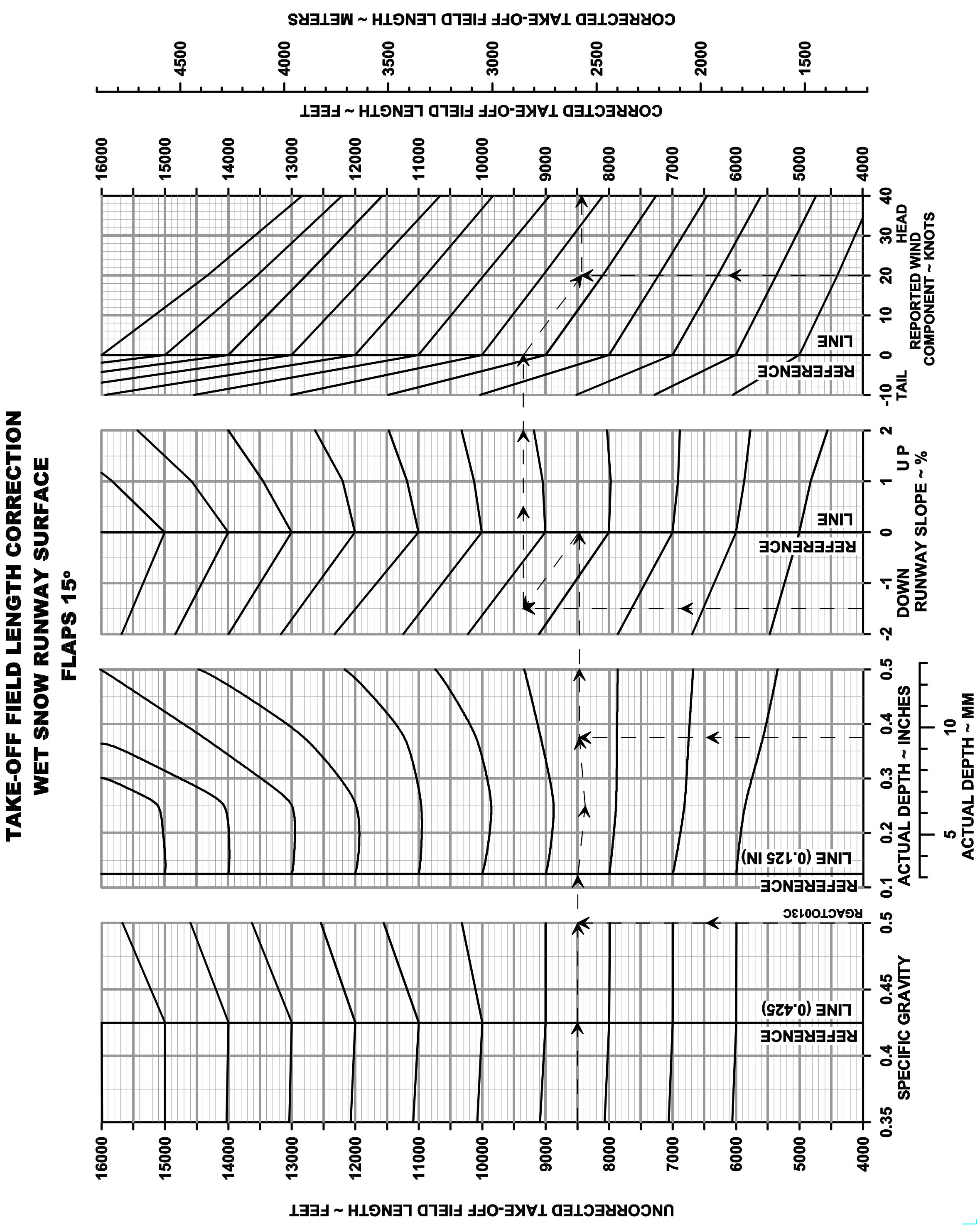
Figure 8



Take-Off Field Length - Slush Runway (Flaps 15°)

Corrected for Runway Gradient

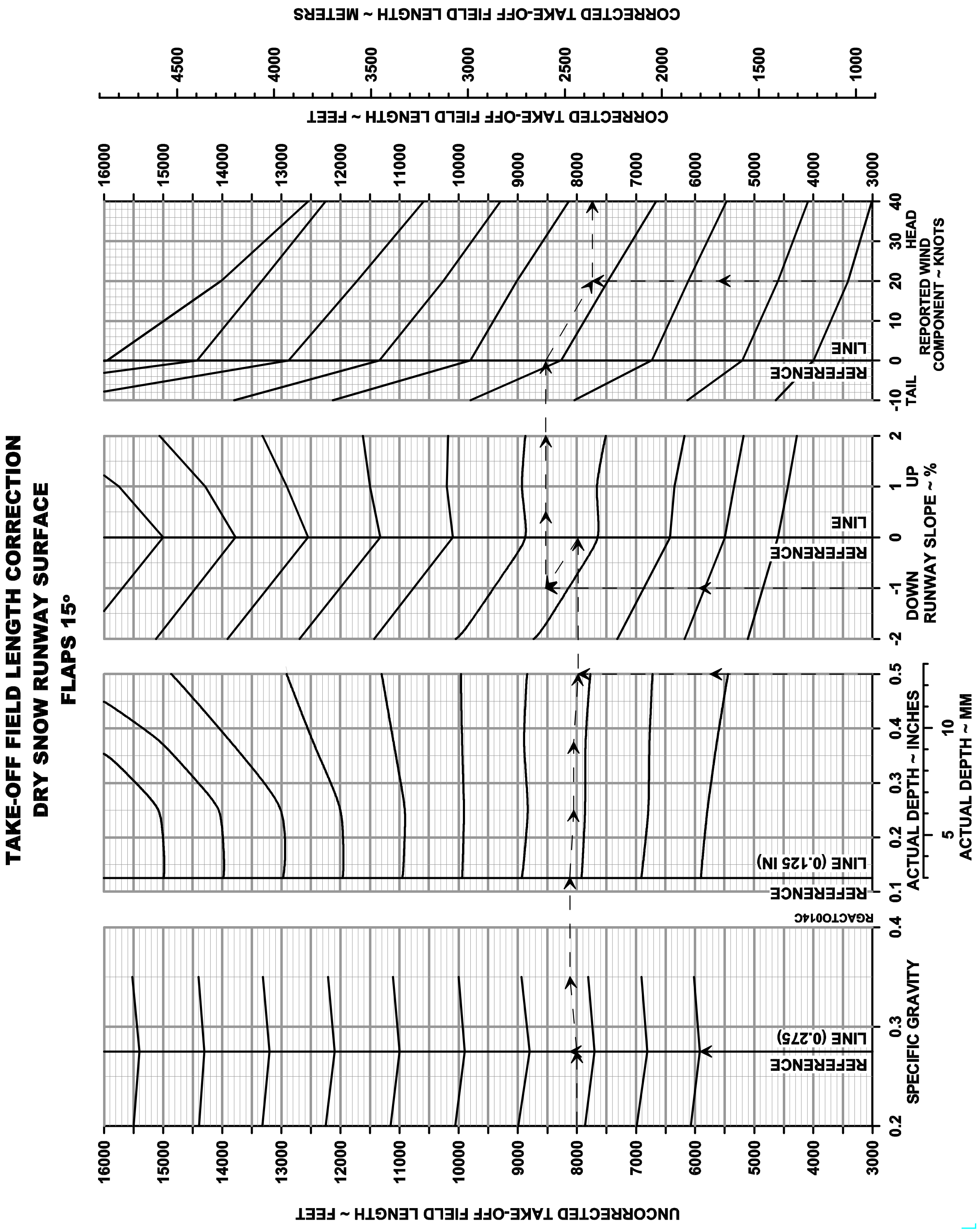
Figure 9



Take-Off Field Length - Wet Snow Runway (Flaps 15°)

Corrected for Runway Gradient

Figure 10



Take-Off Field Length - Dry Snow Runway (Flaps 15°)

Corrected for Runway Gradient

Figure 11

LANDING

Figure 12 shows the unfactored (gross) landing distance required from 50 feet (15.24m) to stop on a wet surface as well as surfaces covered by compacted snow. The associated conditions are the same as those given for landing field length in Sub-section 5.50.

Figures 13 through 16 give unfactored (gross) landing distances on a contaminated runway. They are used in the same way as Figure 12 except that a correction grid for depth of contaminant is provided. No correction for density of contaminant is required since the scheduled data is based on the most conservative density for the range of densities established for the contaminant.

In using this information, obtain the landing distance required for the intended landing weight and compare it with the runway length available. It is then necessary to decide whether the safety margin is adequate, taking into account the weather, operational field length factors and the possible consequence of an overrun or of an undershoot caused by attempts to touchdown early.

Instructions For Use Of Chart

The broken arrow line illustrates the use of the chart.

- Enter the chart with air temperature and move up to the appropriate airfield altitude.
- Move horizontally to the weight grid reference line and follow the guidelines to the required weight.
- Continue horizontally to correct for known surface conditions, reported wind component, runway slope and threshold speed.

NOTE: The wind grid is factored in such a way that the effect of not more than 50% of headwinds and not less than 150% of tailwinds is obtained. Reported winds may therefore be used directly in the grids; however, when a landing is to be made into a headwind greater than 40 knots, the chart is to be read at 40 knots.

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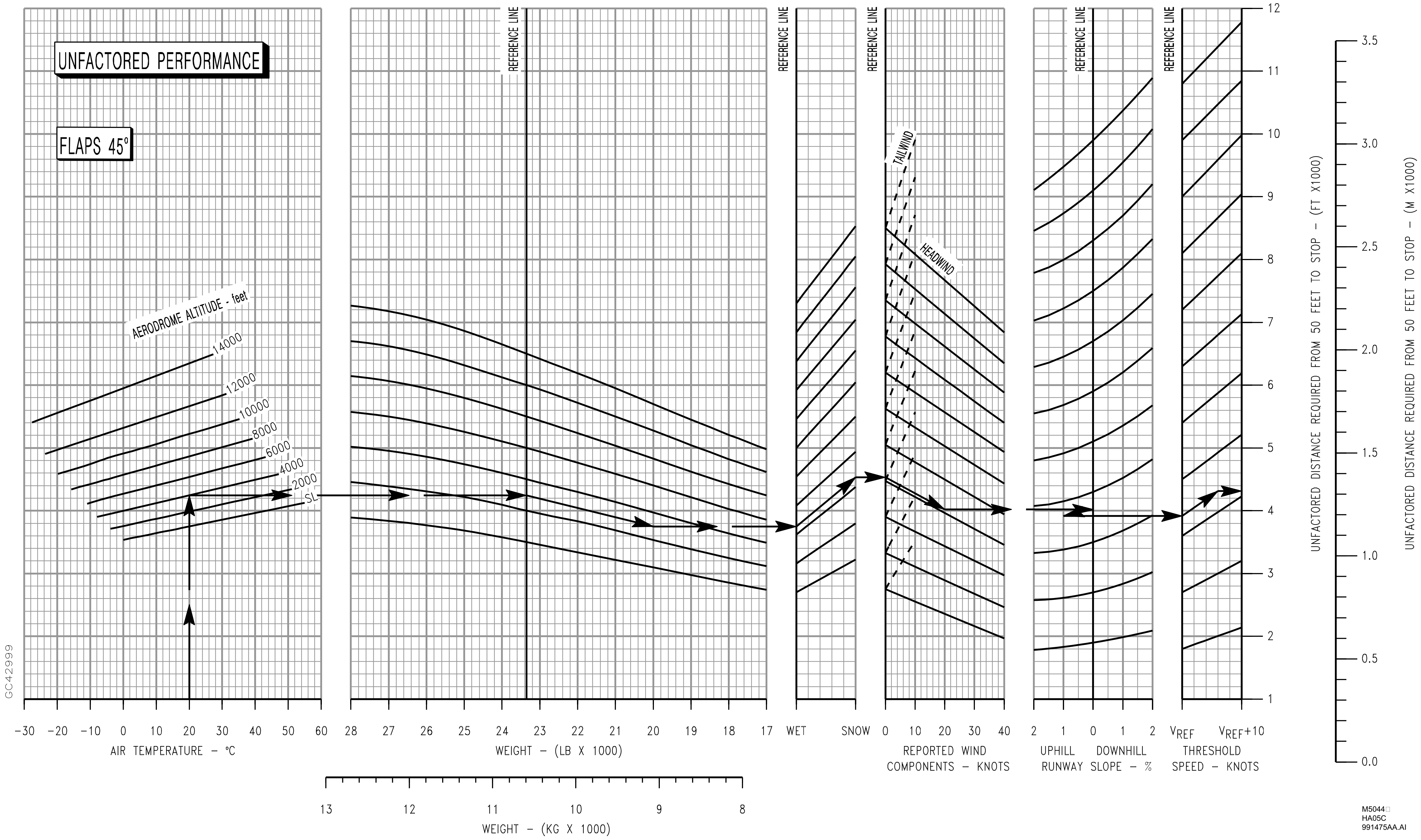
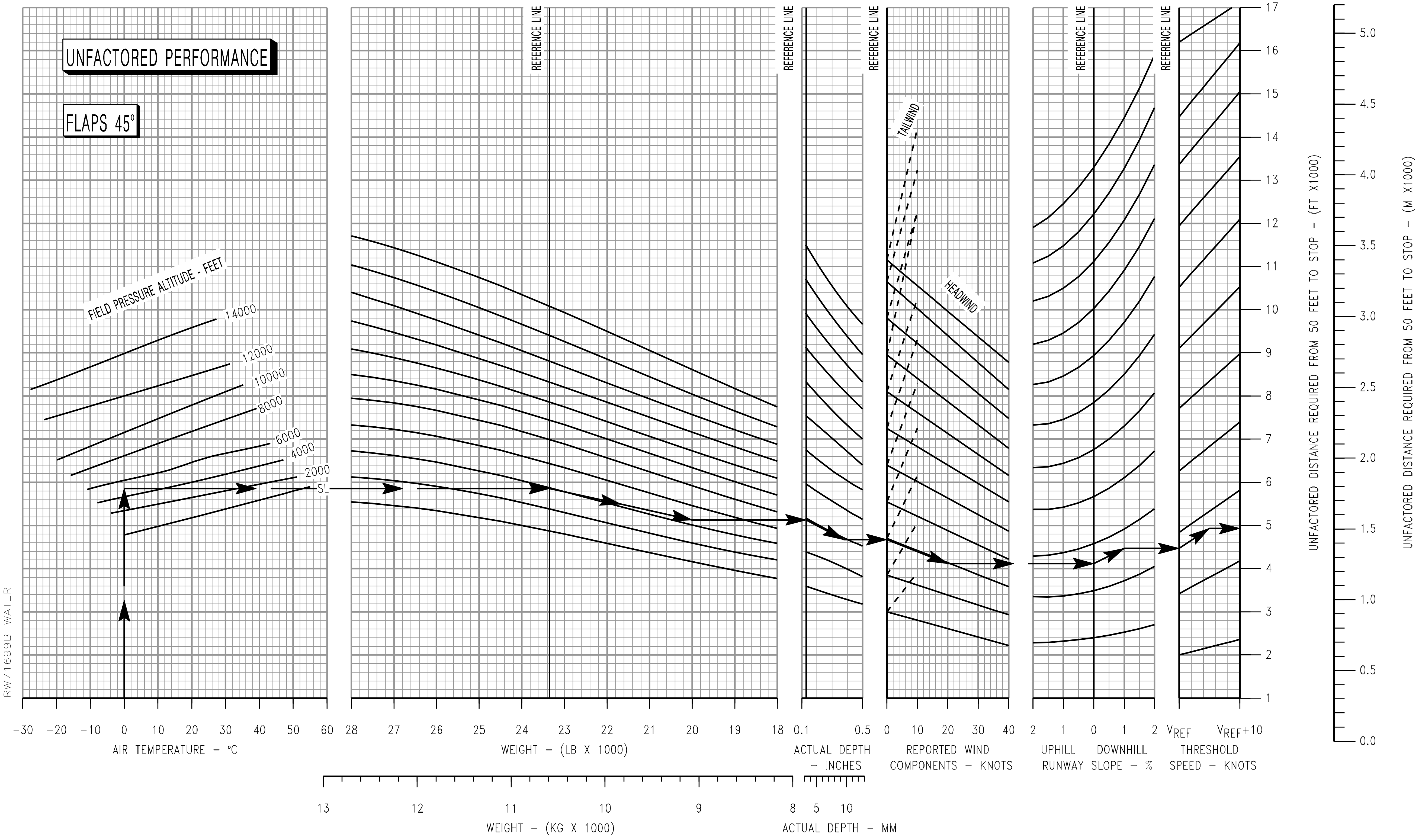
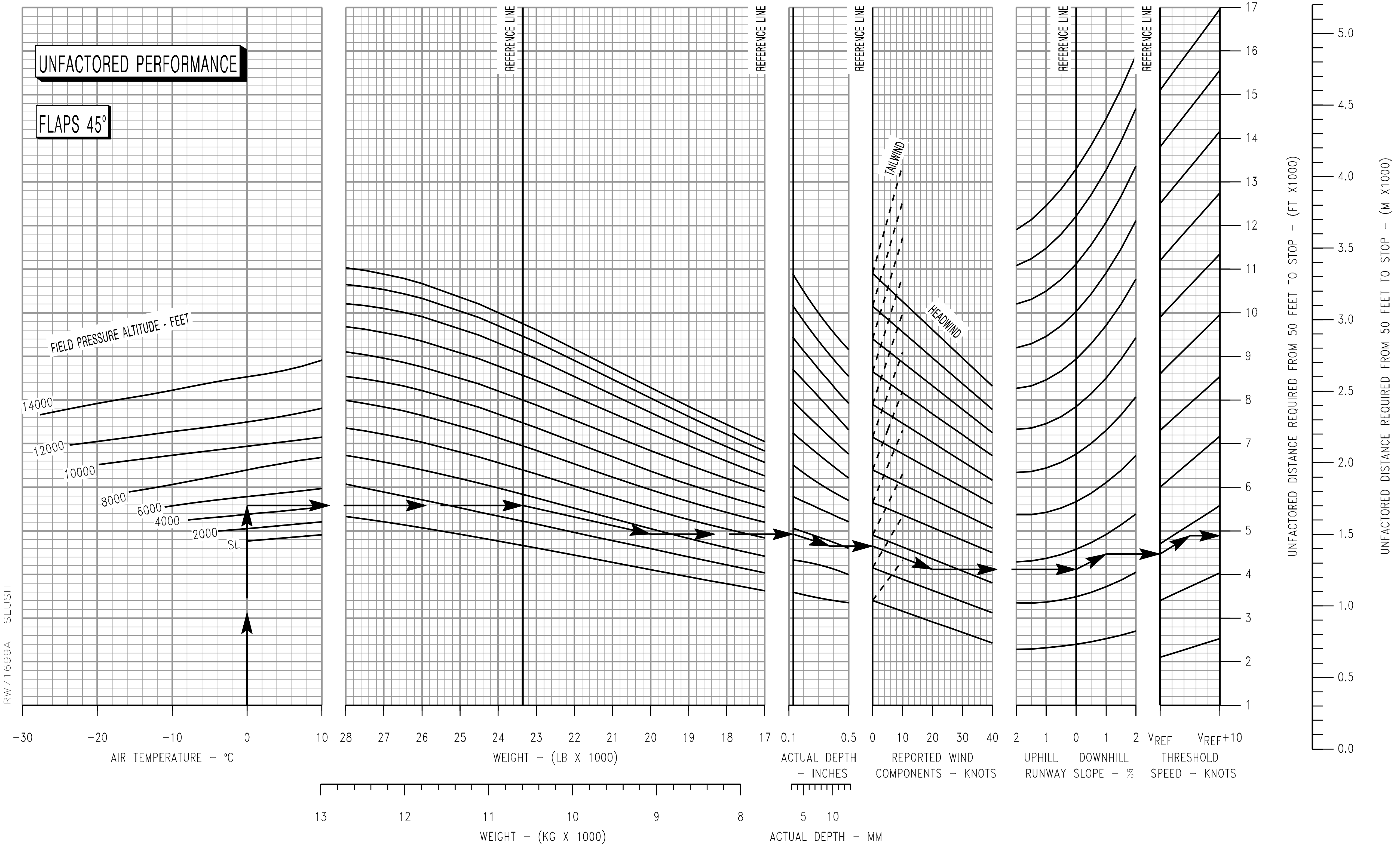


Landing Distance on Wet Runway or Compacted Snow

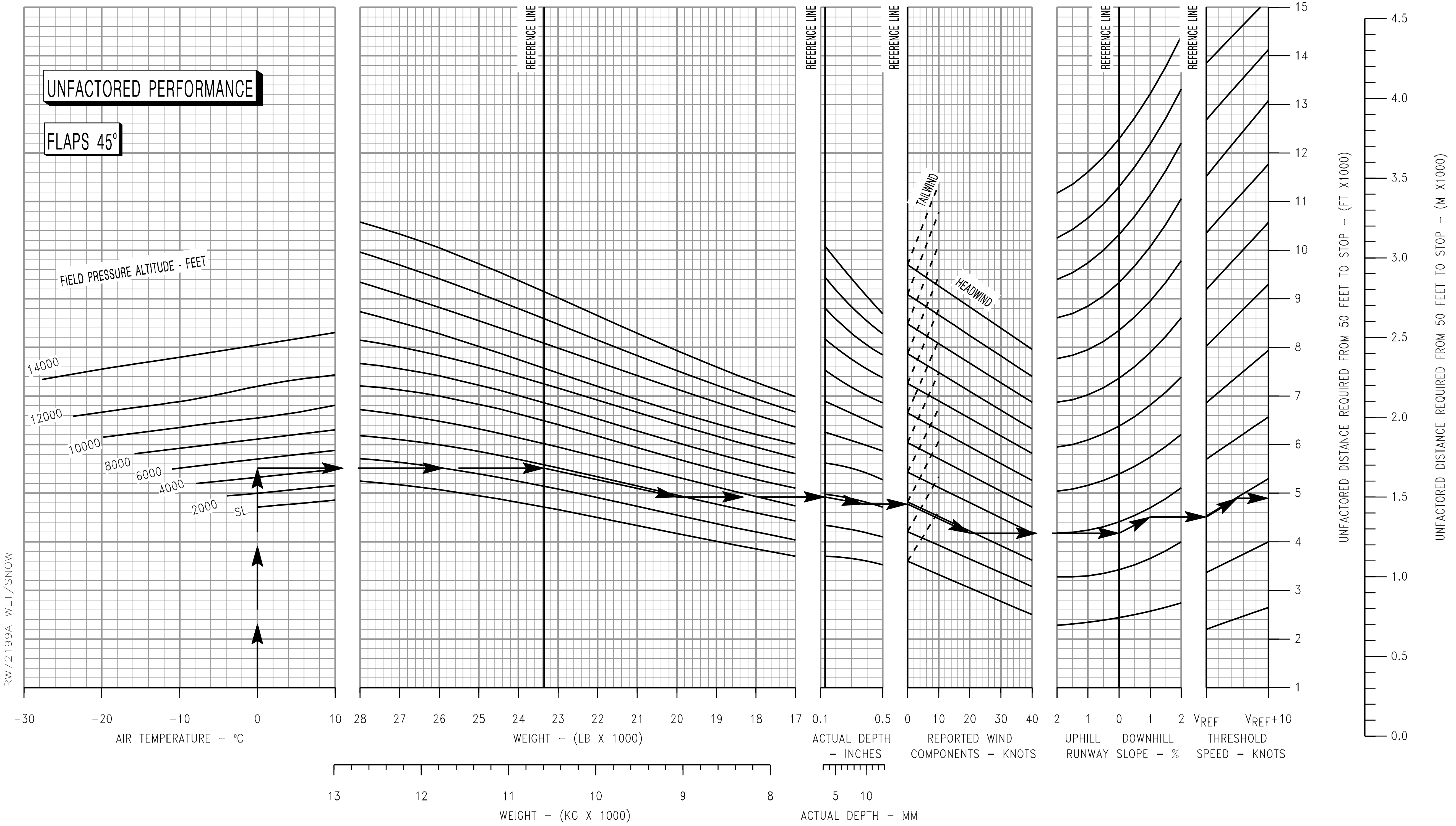


Landing Distance - Standing Water

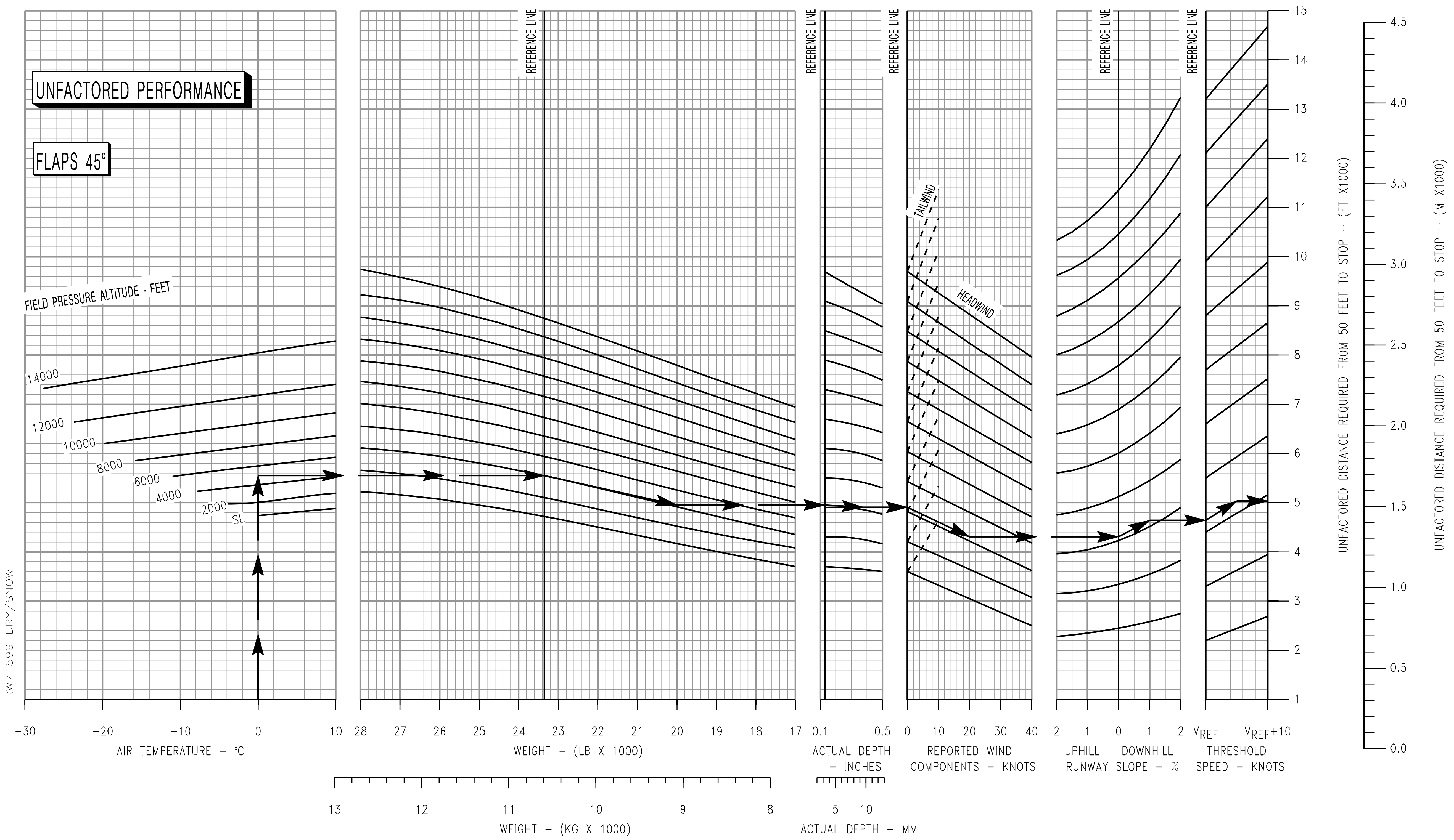
Figure 13



Landing Distance - Slush



Landing Distance - Wet Snow



Landing Distance - Dry Snow

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